LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 149-67

PROJECT LEVEE MAINTENANCE AND REPAIR

1967 INSPECTION REPORT



UNIVERSITY OF CALIF.
DAVIS
MAY 15 1968
GOV'T. DOCS. - LIBRARY

APRIL 1968

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 149-67

PROJECT LEVEE MAINTENANCE AND REPAIR

1967 INSPECTION REPORT

APRIL 1968

RONALD REAGAN
Governor
State of California

WILLIAM R. GIANELLI
Director
Department of Water Resources

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

TABLE OF CONTENTS

	Page
ORGANIZATION	v
ABSTRACT	vi
CHAPTER I. INTRODUCTION	1
Authorization	1
Area of Inspection	4
CHAPTER II. STATUS OF LEVEE MAINTENANCE	7
Description of Tables.	9
Maintenance Ratings	10
Summation of the 1967 Maintenance Performance by Project	16
CHAPTER III. PROJECT MAINTENANCE DEFICIENCIES	17
Areas of Previous Levee Instability.	17
CHAPTER IV. STATUS OF CHANNEL MAINTENANCE	21
Channel Clearing 1967.	22

TABLES

Table No.		
1	SUMMARIES OF PROJECT LEVEE MAINTENANCE Sacramento and American River Flood Control Projects	27
2	SUMMARIES OF PROJECT LEVEE MAINTENANCE San Joaquin River and Tributaries	36
3	SUMMARIES OF PROJECT LEVEE MAINTENANCE Miscellaneous Projects	40

TABLE OF CONTENTS (Continued)

Page

Table No.

4 MAINTENANCE PERFORMANCE BY YEARS Sacramento and American River Flood Control Projects 41

5 MAINTENANCE PERFORMANCE BY YEARS San Joaquin River and Tributaries and Miscellaneous Projects 47

6 1967 SUMMARY OF MAINTENANCE PERFORMANCE ON Sacramento and American River Flood Control Projects 49

7 1967 SUMMARY OF MAINTENANCE PERFORMANCE ON San Joaquin River and Tributaries and Miscellaneous Projects 50

APPENDIX A

STANDARD MAINTENANCE PROCEDURES 53

APPENDIX B

MAJOR LEVEE RECONSTRUCTION DURING 1967 61

PLATES

Plate No.

1 Sacramento River Flood Control Project

2 San Joaquin River Flood Control Project

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor of California
WILLIAM R. GIANELLI, Director, Department of Water Resources
JOHN R. TEERINK, Deputy Director

. . . . . .

SACRAMENTO DISTRICT

Carl A. Werner. . . . . District Engineer

Lawrence A. Mullnix . . . . . Chief, Operations Section

This report was prepared under the
supervision of

John F. Wright, Jr. . . . . Water Resources Engineering Associate

Donald H. Neudeck . . . . . Water Resources Engineering Associate

Assisted by

Daniel J. Pailey. . . . . Water Resources Technician II

Herb F. DeWitt. . . . . Water Resources Technician I

John M. McQueary. . . . . Water Resources Technician I

ABSTRACT

Bulletin No. 149-67 PROJECT LEVEE MAINTENANCE AND REPAIR
1967 INSPECTION REPORT MARCH 1968

The report entitled "Bulletin 149-67, Project Levee Maintenance and Repair" contains ratings of the quality of maintenance performed during 1967 on levees within the flood control projects totaling 1,488 miles in length. / Project levees inspected include the Sacramento, American, San Joaquin, Calaveras, Littlejohns and Truckee Rivers, Merced County Stream Group, Middle Creek, Big Dry Creek Reservoir and Diversion and the Lower San Joaquin Flood Control Project. / The report also contains information in regard to standard maintenance procedures, levee reconstruction completed by the U. S. Corps of Engineers, and foldout plates showing locations of project levees and the various maintaining agencies.

CHAPTER I. INTRODUCTION

This is the annual inspection report for 1967, covering the flood control project works that were constructed, maintained and operated under cooperative state and federal agreements in the Sacramento and San Joaquin Valleys.

Inspection and detailed reports on the conditions of all project levees have been made each year since 1947. Copies of those reports were transmitted to the trustees, or other responsible officials, in each of the respective areas inspected and to The Reclamation Board and U. S. Corps of Engineers.

This bulletin includes the results of the inspection made during the fall of 1967 and reports on the degree of progress made by each agency on the maintenance or repair of levees subsequent to the spring inspection. The ratings given each district reflect the latest conclusions of the Department of Water Resources as to the degree of compliance with federal regulations. The report also includes project maintenance deficiencies, channel clearing accomplished during 1967, standard maintenance procedures and major levee reconstruction work by the U. S. Corps of Engineers during 1967.

Authorization

The report and plans for the Sacramento River Flood Control Project were approved by the State Legislature by Chapter 176, Statutes of 1925. Federal and state project reports, State Supreme Court opinions and State legislation declare that the

reciprocal federal and state legislation constitutes a contract between the two governments, whereby the State has given assurances, that all works after completion will be maintained and operated in accordance with regulations prescribed by the Secretary of War. State legislation enacted in 1927, 1935 and 1939 provided that specified portions or units of the project works should be operated and maintained by the State under the direction and control of the Department of Public Works, acting by and through the State Engineer prior to July 1956, and under the supervision of the Department of Water Resources subsequent to that date, with the cost thereof to be defrayed by the State. By the same acts, Section 8370 of the State Water Code the maintenance and operation of other project works included in local reclamation, drainage or levee districts or municipalities were made the direct obligation of those agencies. The act of 1939 also included section 8360 in the State Water Code which states:

> "On behalf of the State, the Department has supervisory powers over the maintenance and operation of the flood control works of the Sacramento River Flood Control Project."

Although by State law since 1927, it has been the obligation of such local agencies to adequately maintain the units of the project within their respective territories, the State was without power to enforce such maintenance. In order to secure a uniform degree of operation and maintenance on federal flood control projects throughout the nation, the Corps of Engineers on August 16, 1944, made effective regulations governing the maintenance and operation of flood control works which established a

high standard of maintenance. The State, with only supervisory powers over the maintenance of project works by local agencies, lacked specific authority to enforce compliance with the regulations. This situation led to the enactment of Chapter 1528, Statutes of 1947, and repealed by Chapter 1800 Statutes of 1957, relating to operation and maintenance of the Sacramento River Flood Control Project.

Since the enactment of Chapter 1528, Statutes of 1947, the Department has made semiannual inspections of all the levees of authorized flood control projects in the Sacramento-San Joaquin Drainage Basin pursuant to the federal regulations, and reported its findings to the local agencies, The Reclamation Board and the U. S. Corps of Engineers. This activity, initiated pursuant to Section 208.10(a) of the federal regulations, has in effect provided for transfer from the local agencies to the Department the obligation to complying with Sections 8371, 8372 and 8373 of the Water Code. The supervisory powers and duties of the Department are applicable to all works of the Sacramento River Flood Control Project maintained and operated by the local agencies, without regard to status of completion, by whom constructed, or expenditure of federal funds on such works.

The Water Code, as amended by Chapter 1528, Statutes of 1947 and by Chapter 1800, Statutes of 1957, sets forth a procedure which is available when necessary, whereby adequate and uniform maintenance throughout the State may be secured for all

federal flood control projects authorized by the State for financial assistance, including Soil Conservation Service projects. In substance, formation of a maintenance area is initiated following a finding by the Department that there has been a failure on the part of a local agency to properly maintain project works in accordance with federal regulations, or that a local agency no longer desires to operate and maintain the project. Thereafter, by following the prescribed procedure (including the holding of a hearing if protests are filed by the local agency), The Reclamation Board (for projects within the Sacramento-San Joaquin Drainage Basin), or the Department of Water Resources (for projects in other areas of the State), may form a maintenance area in which the Department of Water Resources maintains that particular unit of the project works. Cost of maintenance is apportioned upon the property benefited within the maintenance area on an ad valorem basis. The assessment is extended for collection with county taxes on the county assessment roll.

At present, there are 11 maintenance areas within the Sacramento River Flood Control Project and two on the Major and Minor Tributaries Project.

Area of Inspection

This report covers the following project levees aggregating 1,488 miles in length, situated in 110 districts or areas:

1. Sacramento River and Tributaries
2. American River
3. San Joaquin River and Tributaries
4. Calaveras River, Littlejohns Creek and Tributaries

5. Merced County Stream Group

6. Big Dry Creek Reservoir and Diversion

7. Middle Creek

8. Truckee River

9. Lower San Joaquin Flood Control Project

10. Sacramento River Bank Protection Project

Each levee unit of a district or area was inspected, and required maintenance or repairs noted on a check sheet.

CHAPTER II. STATUS OF LEVEE MAINTENANCE

Inspections and detailed reports in regard to the maintenance condition of all project levees have been made in the spring and fall of each year since 1947. Following these detailed inspections, a joint field inspection is made with representatives of each local maintaining agency and representatives of the State Department of Water Resources to review and discuss the inspection report. The maintenance regulations are explained and attention called to portions of levee work in urgent need of maintenance or repair. Representatives of the local maintaining agency are also given a copy of the inspection sheet listing work that should be accomplished in order to comply with the federal regulations.

With the increasing urban development and recreational needs, the flood control system of the Sacramento and San Joaquin Valleys is being encroached upon more and more. Control of encroachments is essential to the safety and integrity of the system. Section 8710 of the Water Code of the State of California requires that all plans for encroachments must be approved by The Reclamation Board prior to their construction.

The Department of Water Resources and U. S. Army Corps of Engineers review these plans from an engineering and maintenance standpoint. The effect of the encroachment on the flood control capacity is also studied. Comments and recommendations are forwarded to The Reclamation Board for consideration

before that Board acts to approve or deny the planned encroachment. The Department of Water Resources is also responsible for the inspection of the construction of any approved encroachment. The inspections are made to determine that good construction standards are being followed and that the construction is in accordance with the approved plans.

In 1967, a total of 372 applications for encroachments on the various projects of the flood control system were reviewed by the Department. Of this number, four were denied by The Reclamation Board and 34 are pending. The pending applications either require more detailed plans or additional study. It is essential that each local maintaining agency police its levee system in order to control unauthorized encroachments.

Many of the ratings listed as "poor" or "fair" could have been improved by the simple expedient of removing undesirable growth on the levee slopes and rock revetments. This could have been accomplished by spraying the undesirable vegetation with selective herbicides in the spring or fall and burning during the late summer season. Such treatment would have made it possible to view the levee section and detect and repair any burrow holes, caves, slough, or other damages to the levee not otherwise apparent.

Other examples of inadequate maintenance were: (a) Failure to shape crown roadways so as to provide proper drainage during wet weather and to add gravel where needed. (b) Allowing abandoned pipes not properly sealed and inoperative and leaky pipes, to remain in the levee section. (c) Allowing unauthorized grazing or vehicular traffic on the levees. (d) Not burning or mowing grass and weeds during appropriate seasons.

Description of Tables

The status of maintenance is presented herein, in tabular form for convenience of review. The quality of maintenance provided for the levees of the various projects is shown for each maintaining agency.

Table 1 lists all maintaining agencies of Project Levees of the Sacramento River and its tributaries. Table 2 lists maintaining agencies for works completed to date on the San Joaquin River and Tributaries Project, the Calaveras River and Littlejohns Creek Project, the Merced County Stream Group Project, and the Big Dry Creek Reservoir and Diversion Project in Fresno County. Table 3 lists the maintaining agencies for all works completed to date on the Middle Creek Project located in Lake County and Truckee River Project located in Placer County.

In Tables 1, 2 and 3, each district or area responsible for maintenance of the separate portions of levees within its boundaries of jurisdication is listed along with the agency's levee unit number, the stream and bank on which the levee is located, and the length of levee in miles. The columns under Compliance with Federal Regulations Governing Maintenance list 12 major factors taken from the federal regulations and are the basis for determining the overall ratings assigned each district for performance of maintenance for 1967.

The two columns under Overall Ratings list first the progress attained during the year and secondly the maintenance performed by the maintaining agencies. The last column lists and remarks that are pertinent to assigning the ratings.

Table 4 presents a tabulation of maintenance performance for each district or area in the Sacramento River and Tributaries Project from 1947 through 1967. The ratings for districts with more than one unit are composite ratings.

Table 5 presents a tabulation of maintenance performance for each district or area in the San Joaquin River and Tributaries Project and the miscellaneous projects from 1958 through 1967. The ratings for districts with more than one unit are composite ratings.

Tables 6 and 7 list the districts and areas numerically or alphabetically according to their performance ratings for 1967. The ratings for those districts and areas which have more than one levee unit are a composite of the ratings for the individual levee units.

Maintenance Ratings

Maintenance ratings are based upon adherence to the procedures outlined in a leaflet prepared by the Department of Water Resources, entitled "Recommendations for Levee Maintenance", which is a condensation of the Federal Regulations for levee maintenance. These recommendations, which are explained in Appendix A, have been made available to the various agencies responsible for the performance of maintenance.

The ratings assigned to a particular unit and shown in this report are the results of an appraisal of the 12 major factors listed along with the important items considered in assigning the rating for each major factor:

1. District Maintenance Program - Has the maintaining agency initiated a definite maintenance program with a set budget to provide for the program?

2. Readiness For Flood Emergency - Has the maintaining agency organized a definite plan to effectively combat a flood situation? Has one individual been appointed to supervise and be responsible to carry out the plan? Does the maintaining agency have a stockpile of standard flood fighting equipment such as sacks, burlap, canvas, hand tools and access to portable radios for communications during levee patrolling?

3. Adequate Levee Section and Grade - Does the maintaining agency's levee system meet the standards for the levee section and grade for their particular levee system?

The following tabulation lists the standard levee sections for the various projects:

(Tabulation on Page 12)

STANDARD LEVEE SECTIONS

Project	Crown Width in Feet	Slope Landward	Slope Waterward	Freeboard
Sacramento River and Tributaries				
Old Sacramento River	20[1/]	1 on 2	1 on 3	3
Sacramento Major Tributaries	20	1 on 2	1 on 3	3
Sacramento Minor Tributaries	12	1 on 2	1 on 3	3
Bypasses (Yolo & Sutter)	20	1 on 2	1 on 3	5
San Joaquin River and Tributaries				
Rt. Bank San Joaquin downstream from Walthal Sl. to Burns Cut	20	1 on 2	1 on 3	3
Lt. Bank San Joaquin downstream from Banta Carbona Intake to Burns Cut	20	1 on 2	1 on 3	3
San Joaquin River & Tributaries above these points & Old River	12	1 on 2	1 on 3	3
Bear Creek	12	1 on 2	1 on 3	3
San Joaquin River & Tributaries above Merced River	12[2/]	1 on 2	1 on 3	3
Bypasses (Eastside, Mariposa & Chowchilla)	12[2/]	1 on 2	1 on 3	4

1/ The crown width at a number of locations exceeds 20 feet due to public highways or right-of-way agreements.

2/ At a few locations the crown width has been increased due to poor soil conditions or right-of-way agreements.

4. Adequate Encroachment Control - Has the maintaining agency made a concentrated effort on its own to protect the levee section from the establishment of unauthorized encroachments? Has the agency made an effort to remove any of the unauthorized encroachments?

5. Control of Wild Growth - Has the maintaining agency cleared all of the wild growth, such as willows, elderberry, locust, bamboo and other undesirable growth from both slopes and rock revetment?

6. Rodent Control - Has the maintaining agency put forth an effective program for exterminating burrowing animals? Do the maintenance crews make periodic inspections of the levee slopes to exterminate any new infestation of rodents?

7. Repair of Cracks, Burrows and Rainwash - Has the local maintaining agency made all the necessary repairs to any cracks, burrows or rainwash damage on the levee slopes? A number of the local districts exterminate the burrowing rodents but fail to backfill the open burrow.

8. Repair of Erosion and Caving - Has the local maintaining agency made repairs to eroded and caved areas along their banks and levees? If early repairs are made to these damaged areas by the maintaining agency major bank protection work and levee repair can be avoided.

9. Condition of Rock Revetment - Has the maintaining agency effectively controlled and removed wild

growth from the revetment? Have repairs been made to areas where the revetment has been displaced or damaged?

10. Condition of Crown Roadway and Gates - Has the maintaining agency properly shaped the crown roadway so as to provide proper drainage during wet weather? Have ruts been filled and gravel added to provide access at all times for maintenance, patrolling and flood fighting vehicles? Are all gates maintained and repaired to effectively control access by unauthorized vehicular traffic?

11. Control of Livestock Pasturing - Has the maintaining agency properly controlled unauthorized stock pasturing of the levee slopes and insured that any stock damaged sections have been repaired?

12. Condition of Pipes - The following items concerning pipes, if applicable, are noted during the inspection:

a. Is there any debris or any other obstruction at the ends of the pipe to prevent its proper operation?

b. Is there any damage or settlement to the pipe?

c. Is the metal sound? Are rust holes beginning to show on the exposed portions of the pipe?

d. Are all gates and valves in good operating condition?

e. Have any cracks occurred in the headwalls?

f. Is there any erosion occurring adjacent to the structures which might endanger its water tightness or stability?

It should be pointed out that a rating pertains only to the maintenance performance and not to the stability of the levee. For example, a poor maintenance rating does not necessarily imply that the stability of the levee is impaired.

The ratings used in classifying the quality of maintenance performed by each agency area are as follows:

1. "Outstanding" indicates the maintenance work is in complete accordance with the federal regulations governing maintenance and operation of flood control works.

2. "Good" indicates the maintenance work provided is in accordance with federal regulations or varies from that standard only in minor instances.

3. "Fair" indicates that while the work is generally acceptable, considerable improvement is required for compliance with standards.

4. "Poor" indicates that no maintenance or only a token amount has been performed, and indicates that the agency is not fulfilling its obligation to provide adequate maintenance.

SUMMARY OF THE 1967 MAINTENANCE PERFORMANCE BY PROJECT

Project	Miles of Levees	1967 Maintenance Evaluation (Percent) Good	Fair	Poor
Sacramento River Flood Control Project[1]	1063.3	81	15	4
American River Project	8.3	100	-	-
San Joaquin River and Tributaries Project[2]	117.6	59	27	14
Calaveras River and Littlejohns Creek and Tributaries Project	52.9	100	-	-
Littlejohns Creek Channel[3]	23.6	100	-	-
Merced County Stream Group Project	6.4	100	-	-
Big Dry Creek Reservoir and Diversion Project	9.3	100	-	-
Middle Creek Project	14.3	100	-	-
Lower San Joaquin Flood Control Project	191.5	100	-	-
Truckee River Project[3]	0.6	100	-	-
Total Miles (Levee Only)	1463.6			
Percentage of Total Miles		83	13	4

1/ Includes areas where there is only bank protection.

2/ 22.7 miles of levee were not included in this total due to reconstruction work by the U.S.C. of E.

3/ Channel only, mileage or percentage not included in totals.

CHAPTER III. PROJECT MAINTENANCE DEFICIENCIES

In order to continue to improve the quality of maintenance in areas or districts in the Sacramento and San Joaquin Flood Control Projects, there must be an active public agency to perform the required maintenance work. However, areas still exist where there is no local organized district to perform the required maintenance of project works.

The following is a description of the areas in which there is no present organization:

1. Eastern Honcut Creek Area. The levee, 1.49 miles in length, is situated along the left bank of Honcut Creek, extending from the Western Pacific Railroad tracks easterly to high ground. The entire levee has been reconstructed by the Corps of Engineers.

2. The left bank of the San Joaquin River from Paradise Cut to Mossdale Bridge and the right bank of Paradise Cut from Southern Pacific Railroad crossing upstream to Paradise Dam. These levees total 4.2 miles in length and have been reconstructed by the Corps of Engineers.

Areas of Previous Levee Instability

During the 1967 inspection, areas of previous levee instability were inspected at the following locations.

Reclamation District No. 341 - Sherman Island

Levee mile 8.90 to 9.68 - Continued subsidence at this location has occurred since reconstruction of the levee in 1954. New material has been placed on the levee section from time to time, then reshaped and more material added, in an attempt to stabilize the levee section. In 1964, the U. S. Corps of Engineers enlarged and shaped the levee, placed stone protection on the waterward slope and graveled the crown roadway. Active subsidence 0.5 to 1.0 feet in depth along with longitudinal cracks have reoccurred between levee miles 9.15 to 9.21 and 9.24 to 9.26. Subsidence that occurred in 1965 between levee miles 9.03 to 9.08 and 9.21 to 9.22 showed only very minor activity during 1967.

Reclamation District No. 1601 - Twitchell Island

Left bank. Threemile Slough.

Levee mile 0.51 to 1.20 - Subsidence at this location occurred during reconstruction of the levee in 1954. Material was later added to the crown and landward slope from time to time and although the activity continues, the rate of subsidence has materially lessened. The Corps of Engineers has also placed rock on the waterward slope along most of this reach since 1954. During 1964, subsidence occurred between levee mile 0.78 and 1.01 along the landward crown and shoulder 2.0 to 5.0 feet below crown elevation. No new subsidence has been observed in this area since 1964.

Reclamation District No. 2098 - Cache Haas Slough Area

Due to the instability of the levee section between levee mile 3.62 to 4.43, Unit No. 1 and levee mile 4.43 to 5.80,

Unit No. 2, the U. S. Corps of Engineers has not transferred the above portions to the State of California for operation and maintenance. Following is the condition of the areas both within the Corps' responsibility and within the local district's responsibility:

Unit No. 1, right bank Yolo Bypass.

Levee mile 3.63 to 3.68 - Subsidence has occurred along the landward slope and levee crown 1.0 to 2.0 feet below crown elevation.

Levee mile 3.70 to 3.75 - Entire levee section has subsided 1.0 to 2.0 feet below original crown elevation.

Levee mile 3.78 to 3.82 - Entire levee section has subsided 1.0 to 2.0 feet below original crown elevation.

Levee mile 3.82 to 3.86 - Slough along waterward slope approximately 5.0 feet below original grade.

Levee mile 5.13 to 5.24 - Entire levee section has subsided 1.0 to 3.5 feet below original crown elevation.

Levee mile 5.84 to 5.85 - Circular arc slip on waterward slope 1.5 feet below original grade.

Levee mile 5.91 to 5.92 - Circular arc slip on waterward slope 1.5 feet below original grade.

Levee mile 6.89 to 6.90 - Slip along landward side of levee crown and shoulder. The local district continues to make repairs at this location by adding additional material to the waterward slope in an effort to maintain a standard levee section.

Levee mile 7.41 to 7.43 - This section of levee continues to remain unstable. The local district has made repairs from time to time. However, the crown elevation remains 3.0 feet below original grade.

Levee mile 7.92 to 7.96 - This section of levee was repaired in the summer of 1967 by the local district. In the fall of 1967, this section again slipped on the landward slope 0.5 to 1.0-foot.

CHAPTER IV. STATUS OF CHANNEL MAINTENANCE

Through Section 8361 of the Water Code, the State of California is responsible for maintaining the channels and overflow channels of the Sacramento River and its tributaries within the Sacramento and San Joaquin Drainage District. Senate Bill No. 20, amending Section 8361 of the Water Code, was passed in 1965 and gave the Department of Water Resources the responsibility of the maintenance of flood control channels outside of the Sacramento and San Joaquin Drainage District boundaries but adjacent to the reaches wherein federal and state authorized flood control works have been constructed along the Sacramento River and its tributaries.

During 1967, the Department of Water Resources made an inspection of the channels and floodways of the Sacramento and San Joaquin Rivers and their tributaries and the Middle Creek Flood Control Project. The purpose of this inspection was to determine the amount of channel or floodway acreage cleared or recleared by the Department or local interests. These areas were plotted on aerial mosaics and the acreage calculated.

The purpose of the channel and floodway inspection and maintenance is to insure that conditions which adversely affect the channel capacity are eliminated. The integrity of the flood control system must be maintained and the freeboard of the levee system not encroached upon. Maintenance is also required to control adverse velocities which might be directed against the levee system.

The following tabulation lists the acreage cleared in the various channels during 1967 by the maintaining agencies.

CHANNEL CLEARING 1967

Maintaining Agency	Channel or Floodway	Reclearing In Acres	Brush Control In Acres
State of California	Cherokee Canal	-	218.0
State of California	Deer Creek	-	212.0
State of California	Elder Creek	-	125.0
State of California	Lindo Creek	-	150.0
State of California	Mud Creek	-	329.0
State of California	Tisdale Bypass	-	164.0
State of California	Feather River	1,807.0	-
State of California	Sacramento River	693.0	238.0
State of California	Cache Creek	-	44.0
State of California	Cache Creek Settling Basin	40.0	-
State of California	Putah Creek	127.0	-
State of California	Yankee Slough	18.5	-
State of California	Bear River	321.0	-

Maintaining Agency	Channel or Floodway	Reclearing In Acres	Brush Control In Acres
Lower San Joaquin Levee District	San Joaquin River	152.0	-
Lower San Joaquin Levee District	Eastside Bypass	40.0	-
Lower San Joaquin Levee District	Mariposa Bypass	35.0	-
Lower San Joaquin Levee District	Bear Creek	50.0	-
	TOTAL	3,283.5	1,480.0

T A B L E S

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & trenches	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes			Progress	Maintenance	
L.D. No. 1		Feather	x		16.7	G	G	G	F	G	G	G	G	G	G	G	G	G			G	G	
L.D. No. 2		Sacramento	x		4.9	G	F	G	G	G	G	G	G	G	-	G	G	G			G	G	
L.D. No. 3		Sacramento		x	12.2	G	F	G	G	G	G	G	G	G	G	F	G	G			G	G	Heavy Growth of Johnson Grass
L.D. No. 9		Feather	x		6.2	O	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
R.D. No. 3	1	Steamboat Sl.		x	11.0	F	F	G	P	F	F	F	F	P	G	G	G	G			F	F	
do	2	Sacramento	x		17.6	F	F	G	P	F	F	F	F	P	G	G	G	G			F	F	
R.D. No. 10	1	Simmerly Sl.	x		7.7	G	G	G	G	G	G	G	G	G	-	G	G	G			G	G	
do	2	Feather		x	11.2	G	G	G	G	G	G	G	G	G	-	G	G	G			G	G	
do	3	Honcut Creek		x	3.0	G	G	G	G	G	G	F	G	G	-	G	G	G			G	G	
R.D. No. 70	1	Butte Bypass	x		8.0	G	G	G	G	G	G	G	G	G	-	G	G	G			G	G	
do	2	Sacramento		x	15.6	G	G	G	F	G	G	G	G	G	F	G	F	G			G	G	Rock Failure L.M. 0.19 to 0.23
R.D. No. 108		Colusa Drain		x	20.5	G	G	G	G	G	G	F	G	G	-	G	G	G			G	G	
R.D. No. 150	1	Sutter Sl.	x		0.5	F	F	G	G	F	G	F	F	G	G	G	G	G			F	F	
do	2	Sacramento	x		8.0	F	F	G	P	F	P	F	F	P	G	G	G	G			F	F	
do	3	Elk Slough		x	9.6	F	F	G	P	P	F	F	P	P	-	G	G	G			F	P	This levee recieves only backwater against it.
R.D. No. 307		Sacramento	x		6.7	P	P	G	P	P	P	F	P	F	F	G	G	G			P	P	The District has started to clean brush from rock revetment.
R.D. No. 317		Georgiana Sl.	x		2.0	P	F	G	G	F	F	F	F	P	G	G	G	G			P	F	Very little maintenance performed.
R.D. No. 341	1	Threemile Sl.	x		3.3	F	F	G	F	F	F	G	F	F	G	G	F	F			F	F	
do	2	Sacramento		x	6.4	F	F	F	F	F	F	G	F	F	F	G	G	G			F	F	Rock Failure L.M.8.47 to 8.56 & 8.57 to 8.90
R.D. No. 349	1	Sacramento	x		1.6	P	P	G	F	P	P	F	P	P	F	G	G	G			P	P	No maintenance performed.

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
do	2	Steamboat Sl.		x	4.4	P	P	G	P	P	P	F	P	P	F	G	G	G		P	P	Very little maintenance performed
do	3	Sutter Sl.		x	6.6	P	P	G	F	P	P	P	P	P	F	P	G	G		P	P	Token maintenance only
R.D. No. 369		Sacramento		x	0.8	P	P	G	F	P	P	F	P	P	F	G	G	G		P	P	No maintenance performed
R.D. No. 407	1	Georgiana Sl.	x		4.0	G	G	G	F	G	G	G	G	F	G	G	G	G		G	G	
do	2	Sacramento		x	3.4	G	G	G	F	G	G	G	G	F	G	G	G	G		G	G	
R.D. No. 501	1	Steamboat Sl.	x		6.8	G	G	G	F	G	F	G	G	G	G	G	G	G		G	G	
do	2	Cache Sl.		x	3.6	G	G	G	G	G	G	G	G	G	F	G	G	G		G	G	Rock Failure 1.19 to 1.21
do	3	Miner Sl.		x	7.8	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	4	Sutter Sl.	x		2.3	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 536	1	Lindsey Sl.	x		5.7	G	G	G	G	G	F	G	G	G	G	G	G	G		G	G	
do	2	Yolo Bypass	x		5.0	G	G	G	G	G	G	G	G	G	-	G	G	G		G	G	
R.D. No. 537	1	Sacramento	x		4.8	G	F	G	F	G	G	G	G	G	G	G	G	G		G	G	State D.W.R. maintains levee between L.M. 1.05 to 3.70
do	2	Yolo Bypass		x	1.3	G	F	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 551		Sacramento		x	6.8	G	F	G	F	G	F	G	G	P	G	G	G	G		G	G	
R.D. No. 554		Sacramento		x	1.2	P	F	G	P	F	F	G	G	P	G	G	G	G		F	P	Needs Improvement
R.D. No. 556	1	Georgiana Sl.	x		5.5	F	F	G	F	F	F	F	F	P	G	G	G	G		F	F	Needs Improvement
do	2	Sacramento		x	5.7	F	F	G	P	F	F	F	F	P	G	G	G	G		F	F	Needs Improvement
R.D. No. 563		Georgiana Sl.		x	12.4	F	G	G	F	F	F	F	F	P	G	F	G	G		F	F	Needs Improvement
R.D. No. 755		Sacramento		x	1.9	F	F	G	F	F	F	G	G	P	G	G	G	G		F	F	Needs Improvement
R.D. No. 765		Sacramento	x		1.7	F	F	G	G	F	F	G	G	F	G	G	G	G		F	F	
R.D. No. 777		Feather	x		4.1	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
R.D. No. 784	1	Yuba		x	2.2	G	G	G	G	G	G	G	C	G	G	G	G	G		G	G	

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings	
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	Remarks
do	2	Feather		x	13.6	G	G	G	G	G	G	F	G	G	G	G	G	G		G	G	
do	3	Bear	x		4.7	G	G	G	G	G	G	F	G	G	G	G	G	G		G	G	
do	4	Interceptor Canal	x		6.2	G	G	G	G	G	G	F	F	G	-	G	G	G		G	G	
do	5	Interceptor Canal		x	4.2	G	G	G	G	G	G	G	G	G	-	G	G	G		G	G	
do	6	South Dry Creek	x		1.5	G	G	G	G	G	G	F	G	G	-	G	G	G		G	G	
R.D. No. 785	1	Sacramento	x		2.4	P	P	G	G	P	F	F	F	G	G	G	G	G		P	F	
do	2	Yolo Bypass		x	3.3	F	P	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 787		Colusa Drain		x	4.4	G	G	G	G	F	G	F	G	G	G	G	G	G		G	G	
R.D. No. 817	1	South Dry Crk		x	3.8	F	F	G	G	G	F	P	F	F	-	G	G	G		F	F	
do	2	Bear	x		3.9	F	F	G	G	F	F	P	F	F	G	G	G	F		F	F	
R.D. No. 827	1	Sacramento	x		1.4	P	P	G	G	P	G	P	P	P	-	-	G	G		P	P	District claims they have no rights to maintain.
do	2	Yolo Bypass		x	2.8	F	P	G	G	G	G	F	G	G	G	G	G	G		F	F	
R.D. No. 900	1	Sacramento	x		8.0	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Yolo Bypass		x	5.7	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 999	1	Yolo Bypass		x	15.4	F	G	G	F	G	G	G	G	G	G	G	G	G		G	G	This levee does not receive flood waters against it.
do	2	Miner Sl.	x		2.3	F	G	G	F	F	F	G	G	F	G	G	G	G		F	F	
do	3	Sutter Sl.	x		3.7	F	G	G	F	F	F	G	G	F	G	G	G	G		F	F	
do	4	Sacramento	x		1.2	F	G	G	F	F	F	G	G	G	G	G	G	G		F	F	
do	5	Elk Slough	x		9.7	P	G	G	P	P	P	P	P	P	-	P	P	P		P	P	This levee receives only back water against it.

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & rainwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
R.D. No. 1000	1	Sacramento		x	18.6	O	O	G	F	G	G	F	G	F	G	G	G	G		G	G	
do	2	American	x		2.3	O	O	G	G	G	G	G	G	G	-	G	G	G		G	G	
do	3	Natomas East Canal	x		17.3	O	O	G	G	G	G	F	G	G	-	G	G	G		G	G	
do	4	Natomas Cross Canal		x	4.4	O	O	G	G	G	G	G	G	G	-	G	G	G		O	G	
R.D. No. 1001	1	Yankee Sl.	x		4.2	G	G	G	G	F	F	G	G	G	G	G	G	G		G	G	
do	2	Yankee Sl.		x	3.7	G	G	G	G	F	G	F	F	G	G	G	G	G		G	G	
do	3	Bear		x	12.6	G	G	G	G	F	G	F	F	G	G	G	G	G		G	G	
do	4	Feather		x	13.4	G	G	G	F	G	G	G	G	F	G	G	G	G		G	G	
do	5	Natomas Cross Canal	x		5.4	G	G	G	G	G	G	G	F	G	G	G	G	G		G	G	
do	6	Coon Creek Interceptor	x		4.8	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
R.D. No. 1500	1	Sacramento		x	33.6	O	G	G	G	G	G	G	G	G	G	G	G	G		G	O	Rock Failure at L.M. 8.36 & 14.41
do	2	Sutter Bypass	x		20.8	O	G	G	G	G	G	G	G	G	G	G	G	G		G	O	
R.D. No. 1600	1	Sacramento	x		10.6	F	G	G	F	G	G	G	G	F	G	G	G	G		G	G	
do	2	Yolo Bypass		x	4.2	F	G	G	G	G	G	G	F	G	G	F	G	G		G	G	
R.D. No. 1601		Threemile Sl.		x	2.5	F	F	P	G	G	G	G	F	P	F	F	G	G		F	F	
R.D. No. 1660	1	Sacramento		x	3.0	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Sutter Bypass	x		9.2	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 2035	1	Cache Creek Settling Basin	x		2.0	O	O	G	G	O	O	G	O	G	-	G	G	G		O	O	
do	2	Yolo Bypass	x		7.6	O	O	G	G	O	O	G	O	G	-	G	G	G		O	O	
do	3	Willow Sl. Bypass		x	2.5	O	O	G	G	O	O	G	O	G	-	G	G	G		O	O	

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & animals	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
R.D. No. 2060	1	Lindsey Sl.		x	7.2	G	G	G	G	F	G	G	G	G	G	G	G	G		G	G	
do	2	Ulatis Crk.	x		3.6	P	F	G	G	F	F	F	P	F	-	F	G	G		P	F	Entire Levee should be burned.
do	3	Cache Sl.	x		5.4	G	G	G	G	G	G	G	G	F	G	F	G	G		G	G	
R.D. No. 2067		Sacramento		x	10.2	G	F	G	F	F	G	G	G	F	G	G	G	F		F	F	
R.D. No. 2068	1	Yolo Bypass	x		5.5	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Back Levee		x	3.2	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 2098	1	Yolo Bypass	x		4.4	G	G	P	F	G	G	G	G	G	G	G	G	G		G	G	
do	2	Cache Slough		x	2.9	G	G	P	G	G	G	G	G	G	G	G	G	G		G	G	
do	3	Haas Slough		x	1.9	G	G	G	G	G	G	G	G	F	G	G	G	G		G	G	
do	4	Back Levee		x	3.0	G	G	G	G	G	G	G	G	F	G	G	G	G		G	G	
R.D. No. 2103	1	South Dry Crk.		x	4.8	P	F	G	P	F	F	P	P	P	-	P	F	G		P	P	Token maintenance only
do	2	Bear	x		4.9	P	F	G	F	F	P	P	P	F	G	G	G	G		P	P	Token maintenance only
R.D. No. 2104	1	Cache Sl.		x	2.6	F	F	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Haas Sl.	x		4.8	F	F	G	G	G	G	G	G	G	G	G	G	G		G	G	
American River Flood Control District	1	Arcade Cr.		x	2.1	G	G	G	F	G	G	G	G	G	-	G	G	G		G	G	
do	2	Natomas East Canal		x	4.0	G	G	G	G	G	G	F	G	G	-	G	G	G		G	G	
do	3	American	x		3.4	G	G	G	F	G	G	G	G	G	G	G	G	G		G	G	
do	4	American		x	11.0	G	G	G	P	G	G	F	G	G	G	G	G	G		G	G	
do	5	Sacramento		x	0.4	G	G	G	G	G	G	G	G	G	-	G	G	G		G	G	
do	6	Linda Creek		x	1.3	G	G	G	G	G	G	G	G	G	-	F	F	G		G	G	
do	7	Arcade Crk.	x		1.9	G	G	G	G	G	G	G	G	G	-	G	G	G		G	G	
Sacramento River Westside Lev. Dist.		Sacramento	x		50.2	G	G	G	F	G	G	F	F	F	G	G	F	G		G	G	

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Control of wild growth: Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & trampling	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
City of Marysville	1	Simmerly Sl.		x	3.2	O	O	G	G	G	G	O	G	G	-	G	G	G		G	O	
do	2	Feather		x	1.3	O	O	G	G	G	G	O	G	G	-	G	G	G		G	O	
do	3	Yuba	x		6.9	O	O	G	G	G	G	O	G	G	G	G	G	G		G	O	
City of Sacramento		Sacramento		x	3.6	G	G	G	F	F	G	G	G	G	G	G	G	G		G	G	
Knights Landing Ridge Drainage District	1	Knights Landing Ridge Cut	x		6.4	G	G	G	G	G	G	F	G	G	G	F	G	F		G	G	
do	2	Knights Landing Ridge Cut		x	6.1	G	G	G	G	G	G	F	G	G	G	G	G	G		G	G	
Eastern Honcut Creek Area		Honcut Crk.		x	1.5	P	P	G	G	P	P	G	G	G	-	P	G	G		P	P	Unorganized Area
Tehama County Flood Control District	1	Deer Creek		x	4.1	G	F	G	G	G	G	G	G	G	G	F	F	G		G	G	
do	2	Deer Creek	x		1.5	G	F	G	G	G	G	G	G	G	G	G	F	G		F	G	
do	3	Deer Creek 1/	x		1.3	G	F	-	-	F	-	-	G	G	G	-	-	-		G	G	
do	4	Elder Creek	x		4.1	G	F	G	G	G	G	G	G	F	G	G	G	G		G	G	
do	5	Elder Creek		x	4.0	G	F	G	G	G	G	G	G	F	G	G	G	G		G	G	
do	6	Sacramento 1/		x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	7	Sacramento 1/	x		0.8	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	8	Sacramento 1/		x	0.6	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	9	Sacramento 1/		x	0.3	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	10	Sacramento 1/	x		0.7	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	11	Sacramento 1/		x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	
do	12	Sacramento 1/		x	0.5	G	F	-	-	G	-	-	G	G	G	G	-	-		G	G	

1/ Channel and rock revetment sites
2/ Channel only

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Control of wild growth: Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramets	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
Butte County	1	Mud Creek	x		7.3	O	G	G	G	G	G	G	G	G	G	G	G	G		O	G	
do	2	Mud Creek		x	8.2	O	G	G	G	G	G	G	G	G	G	G	G	G		O	G	
do	3	Sycamore & Sheep Hollow Creeks	x	x	4.2	O	G	G	G	G	G	G	G	G	G	G	G	G		O	G	
do	4	Sycamore & Dry Creeks	x	x	2.9	O	G	G	G	G	G	G	G	G	G	G	G	G		O	G	
do	5	Big Chico Diversion	2/		1.8	O	G	G	G	G	G	G	G	G	G	G	G	G		O	G	
Yolo County		Cache Creek	x		0.2	F	F	G	G	G	G	G	G	G	G	G	G	G		G	G	
STATE OF CALIFORNIA																						
Sacramento River East Levee	1	Sacramento		x	20.4	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Colusa Bypass	x	x	2.0	G	O	G	G	G	G	G	G	G	G	G	G	-		G	G	
do	3	Moulton Bypass	x	x	2.3	G	O	F	G	G	G	G	G	G	G	G	G	G		G	G	
Wadsworth Canal	1	Wadsworth Canal		x	4.7	G	O	G	G	G	G	G	G	G	G	G	G	F		G	G	
do	2	Wadsworth Canal	x		4.7	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
Sutter Bypass		Sutter Bypass		x	22.4	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
Feather River Hamilton Bend		Feather	x		3.4	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
Cache Creek	1	Cache Creek		x	11.8	G	O	G	F	G	G	G	G	G	G	G	G	G		G	G	
do	2	Cache Creek	x		6.9	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	3	Settling Basin	x		1.8	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	4	Settling Basin		x	2.6	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
Sacramento Bypass	1	Sacramento Bypass	x		1.8	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Sacramento Bypass		x	1.8	G	O	G	G	G	G	G	G	G	G	G	G	G		G	G	

O-Outstanding G-Good F-Fair P-Poor

2/ Channel only

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Control of wild growth: Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ravelling	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes			Progress	Maintenance	
West Levee Yolo Bypass	1	Yolo Bypass	x		2.7	G	O	G	F	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Yolo Bypass	x		1.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	3	Yolo Bypass	x		1.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	4	Yolo Bypass	x		3.6	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
East Levee Yolo Bypass		Yolo Bypass		x	2.0	G	O	G	F	G	G	G	G	G	G	G	G	G	G		G	G	
Willow Slough Bypass	1	Willow Slough Bypass		x	5.1	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Willow Slough Bypass	x		7.4	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
Putah Creek	1	Putah Creek		x	9.0	G	O	G	F	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Putah Creek	x		7.3	G	O	G	F	G	G	G	G	G	G	G	G	G	G		G	G	
Tisdale Bypass	1	Tisdale Bypass		x	4.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Tisdale Bypass	x		4.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
Mtc. Area No. 1		Sacramento	x		17.1	G	O	F	G	G	G	G	G	G	G	G	G	G	G		G	G	
Mtc. Area No. 2		Sacramento	x		12.4	G	O	F	G	G	G	G	G	G	G	F	G	G	G		G	G	
Mtc. Area No. 3		Feather	x		5.2	G	O	G	G	G	G	G	G	G	-	G	G	G	G		G	G	
Mtc. Area No. 4		Sacramento	x		3.4	G	O	F	G	G	G	G	G	F	G	G	G	G	G		G	G	
Mtc. Area No. 5	1	Butte Creek		x	15.4	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	2	Butte Creek	x		16.5	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
Mtc. Area No. 6		Sacramento	x		6.0	G	O	G	F	F	G	G	G	F	G	G	G	G	G		G	G	
Mtc. Area No. 7		Feather	x		12.1	G	O	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
Mtc. Area No. 8		Yuba		x	3.8	G	O	G	G	G	G	G	G	G	-	G	G	G	G		G	G	

O-Outstanding G-Good F-Fair P-Poor

TABLE I

SACRAMENTO VALLEY STREAMS
SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR - 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ravines	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock posturing	Condition of pipes			Progress	Maintenance	
Mtc. Area No. 9		Sacramento		x	19.6	G	O	G	F	F	G	G	G	G	G	G	G	G			G	G	Clear Rock Revetment
Mtc. Area No. 10		American	x		4.3	G	O	G	G	F	G	G	G	G	G	G	G	G			G	G	Clear Rock Revetment
Mtc. Area No. 11		American	x		4.0	G	O	G	F	G	G	G	G	G	G	G	G	G			G	G	
Mtc. Area No. 12		Colusa Drain		x	11.3	G	O	G	G	G	G	G	G	G	-	G	F	G			G	G	
Mtc. Area No. 13	1	Cherokee Canal	x		18.9	G	O	G	G	G	G	G	G	G	G	F	G	G			G	G	
do	2	Cherokee Canal		x	23.1	G	O	G	G	G	G	G	G	G	G	F	G	G			G	G	

O- Outstanding G-Good F-Fair P-Poor

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside control (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
R.D. No. 1		Old River	x		1.2	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	
R.D. No. 17	1	French Camp Slough		x	1.8	G	G	G	G	G	G	G	G	G	-	G	G	G	G	G		
do	2	San Joaquin	x		14.4	F	G	G	F	G	G	P	P	G	G	G	F	G	F	G		
R.D. No. 404	1	San Joaquin	x		2.3	F	F	G	G	F	F	F	F	G	G	G	G	F	F	F		
do	2	French Camp Slough	x		1.8	F	F	G	G	F	F	F	F	G	-	F	G	G	F	F		
R.D. No. 524		San Joaquin		x	6.3	F	F	G	F	F	F	F	F	F	G	G	G	F	F	F		
R.D. No. 544	1	San Joaquin		x	6.1	F	F	G	F	F	F	G	G	G	G	F	G	G	F	F		
do	2	Old River	x		4.2	F	F	G	F	F	F	G	G	F	G	G	G	G	F	F		
R.D. No. 2031	1	Stanislaus	x		7.2	F	F	G	G	G	G	F	G	G	G	G	G	G	F	G		
do	2	San Joaquin		x	6.0	F	F	G	G	G	G	G	G	G	G	G	G	G	F	G		
R.D. No. 2058		Paradise Cut		x	6.7	G	G	G	F	G	G	F	G	P	-	G	G	G	G	G		
R.D. No. 2062	1	San Joaquin		x	2.6	G	G	G	G	G	G	G	G	F	G	G	G	G	G	G		
do	2	Paradise Cut	x		4.0	G	G	G	F	G	F	G	G	P	-	G	G	G	G	G		
do	3	Old River		x	5.6	G	G	G	G	F	G	G	G	F	G	G	G	G	G	G		
R.D. No. 2063		San Joaquin	x		10.6	G	G	G	F	G	G	G	G	G	G	G	P	G	G	G		
R.D. No. 2064	1	San Joaquin	x		5.4	LEVEE UNDER CONSTRUCTION BY U. S. C. OF E.																
do	2	Stanislaus		x	4.3	LEVEE UNDER CONSTRUCTION BY U. S. C. OF E.																
R.D. No. 2075		San Joaquin	x		7.6	LEVEE UNDER CONSTRUCTION BY U. S. C. OF E.																
R.D. No. 2085		San Joaquin		x	5.4	LEVEE UNDER CONSTRUCTION BY U. S. C. OF E.																
R.D. No. 2089	1	Old River	x		1.5	F	F	G	G	F	G	G	G	P	G	G	G	G	F	F		
do	2	Salmon Sl.	x		1.4	F	F	G	G	F	G	G	G	P	G	G	G	G	F	F		
R.D. No. 2091		San Joaquin	x		7.6	P	F	G	G	G	G	P	P	F	G	F	F	G	P	P	No maintenance performed	

O-Outstanding F-Fair G-Good P-Poor

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Control of wild growth: Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramwash	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
R.D. No. 2092		San Joaquin	x		3.8	F	F	G	G	F	G	G	G	G	G	P	G	G		F	F	
R.D. No. 2094	1	San Joaquin	x		2.8	G	G	G	G	F	G	G	G	F	G	G	G	G		G	G	
do	2	San Joaquin[1/]			0.5	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
R.D. No. 2095	1	Paradise Cut		x	1.5	P	P	G	F	G	G	G	G	G	G	F	G	F		F	P	
do	2	San Joaquin		x	2.9	P	P	G	F	F	F	G	G	G	G	G	G	G		F	P	
R.D. No. 2096		San Joaquin	x		0.2	G	G	G	F	G	G	G	F	G	G	G	G	G		G	G	
R.D. No. 2099		San Joaquin		x	2.4	P	F	F	G	F	F	G	G	F	G	G	G	G		F	F	Very little maintenance performed
R.D. No. 2100		San Joaquin		x	2.7	G	G	G	G	G	G	G	G	G	G	F	G	G		G	G	
R.D. No. 2101	1	San Joaquin		x	3.2	G	G	G	F	G	G	G	G	F	G	G	G	G		G	G	
do	2	San Joaquin[1/]			0.3	G	G	G	G	G	G	G	G	G	G	G	P	G		G	G	
R.D. No. 2102		San Joaquin			1.8	F	G	G	G	G	G	G	G	G	G	G	G	G		F	G	
San Joaquin County (Unorganized)	1	San Joaquin		x	2.4	P	P	G	F	P	G	G	G	G	G	G	G	G		F	F	Local Landowners are performing maintenance
do	2	Paradise Cut	x		1.8	P	P	G	G	F	G	G	G	G	-	F	G	F		F	F	Local Landowners are performing maintenance
San Joaquin County Flood Control Dist.	1	Littlejohns Cr.		x	2.9	G	G	G	G	G	G	G	G	G	-	G	G	G		G	G	
do	2	Littlejohns Cr.	x		3.5	G	G	G	G	G	G	F	G	G	-	G	G	G		G	G	
do	3	South Littlejohns Creek		2/	16.5	G	G	-	F	G	-	G	G	G	-	-	G	G		G	G	
do	4	North Littlejohns Creek		2/	6.1	G	G	-	G	G	-	G	G	G	-	-	G	G		G	G	
do	5	Duck Creek Diversion		2/	1.0	G	G	-	G	G	-	G	G	G	-	-	G	G		G	G	
do	6	Dikes A,B &C		1/	-	G	G	G	G	G	G	F	F	G	G	G	G	G		G	G	
o	7	Bear Creek	x		16.8	G	G	G	F	G	G	F	F	G	G	G	G	G		G	G	

1/ Spur Levee
2/ Channel Only

O-Outstanding G-Good F-Fair P-Poor

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside control (including rock)	Control of wild growth: Landside	Control of wild growth: Rodent control	Repair of cracks, burrows & trampling	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
do	8	Bear Creek		x	16.5	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	9	Paddy Creek		x	1.5	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	10	Paddy Creek	x		1.4	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	11	N. Paddy Crk.	x		3.6	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	12	N. Paddy Crk.		x	3.9	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	13	Mid. Paddy Crk.		x	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	14	Mid. Paddy Crk.	x		1.4	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
Lower San Joaquin Levee District	1	San Joaquin	x		22.6	G	G	G	F	G	G	G	G	G	G	G	G	G		G	G	
do	2	San Joaquin		x	13.8	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	3	San Joaquin	x		2.2	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	4	San Joaquin		x	1.6	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	5	Eastside By-pass	x		34.8	G	G	P	G	G	G	G	G	F	G	G	F	G		G	G	Levee washed out at Lev. Mile 0.31 12/64
do	6	Eastside By-pass		x	36.4	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	7	Bear Creek	x		3.6	G	G	G	G	G	G	G	G	F	G	G	F	G		G	G	
do	8	Bear Creek		x	3.6	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	9	Owens Creek	x		0.9	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	10	Owens Creek		x	0.8	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	11	Mariposa By-pass	x		3.3	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	12	Mariposa By-pass		x	3.4	G	G	G	G	G	G	G	G	G	G	G	F	G		G	G	
do	13	Ash Slough	x		1.3	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	14	Ash Slough		x	1.3	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	

O-Outstanding G-Good F-Fair P-Poor

TABLE 2

SAN JOAQUIN VALLEY STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works															Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & ramps	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock posturing	Condition of pipes			Progress	Maintenance	
Lower San Joaquin District	15	Berenda Sl.	x		2.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	
do	16	Berenda Sl.		x	2.0	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	17	Chowchilla Canal Bypass	x		16.1	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	18	Chowchilla Canal Bypass		x	15.3	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	22	Eastside Canal		x	5.5	F	G	G	G	G	G	G	G	G	G	G	F	G			G	G	
do	23	San Joaquin	x		10.2	This unit has not been accepted for maintenance by the local district.																	No maintenance performed.
do	24	San Joaquin		x	8.3	This unit has not been accepted for maintenance by the local district.																	No maintenance performed.
do	25	Salt Slough	x		2.5	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
Merced County Stream Group	1	Black Rascal Diversion	x		1.6	G	G	G	G	G	G	G	G	G	-	G	G	G			G	G	
do	2	Black Rascal Diversion		x	1.9	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	3	Owens Creek	x		1.4	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	4	Owens Creek		x	1.4	G	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
Fresno County Stream Group	1	Big Dry Cr. Reservoir		x	7.4	F	G	G	P	G	G	G	G	G	G	G	P	G			G	G	Repair cattle damage
do	2	Big Dry Cr. Outlet		x	0.6	F	G	G	G	G	G	G	G	G	G	G	G	G			G	G	
do	3	Little Dry Crk. Outlet	x		1.3	F	G	G	P	G	G	G	G	G	G	G	G	G			G	G	Encroachments continue in overflow channel

O-Outstanding G-Good F-Fair P-Poor

TABLE 3

MISCELLANEOUS STREAMS

SUMMARIES OF PROJECT LEVEE MAINTENANCE FOR – 1967

SHEET 1 OF 1 SHEETS

District or area	Unit number	Stream	Bank		Length of levee in miles	Compliance with federal regulations governing maintenance of flood protection works														Overall ratings		Remarks
			Rt	Lt		District maintenance program	Readiness for flood emergency	Adequate levee section & grade	Adequate encroachment control	Waterside (including rock)	Control of wild growth: Landside	Rodent control	Repair of cracks, burrows & trampoh	Repair of erosion and caving	Condition of rock revetment	Condition of crown roadways & gates	Control of livestock pasturing	Condition of pipes		Progress	Maintenance	
Lake County Flood Control District	1	Middle Creek		x	7.3	G	G	G	F	F	G	G	G	G	G	F	G	G		P	G	
do.	2	Middle Creek	x		3.1	G	G	G	G	F	G	G	G	F	G	F	G	G		F	G	
do	3	Scotts Creek		x	1.4	G	G	G	G	G	G	G	F	G	G	G	G	G		G	G	
do	4	Clover Creek & Bypass	x		1.5	G	G	G	F	G	G	G	G	G	G	G	G	G		G	G	
do	5	Clover Creek & Bypass		x	1.0	G	G	G	F	G	G	G	G	G	G	G	G	G		G	G	
Placer County		Truckee	1/		0.6	G	-	-	F	G	G	-	-	-	-	-	-	-		G	G	

1/ Channel Only O-Outstanding G-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																									
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
L.D. No. 1, Sutter Co.	16.7	F	F	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G	O	G	G	G							
L.D. No. 2, Glenn Co.	4.9	P	P	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
L.D. No. 3, Glenn Co.	12.2	P	F	F	P	P	P	I	G	F	P	P	F	P	F	G	G	G	G	G	G	G							
L.D. No. 9, Sutter Co.	6.2	P	F	F	F	G	G	F	G	F	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 3, Grand Island	28.6	P	P	P	P	P	F	F	F	P	P	P	F	F	G	G	G	F	F	F	F	F							
R.D. No. 10, Simmerly	21.9	F	F	F	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 70, Meridian	23.6	F	F	G	G	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 108, River Farms	20.5						G	G	G	G	F	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 150, Merritt Island	18.1	P	F	F	F	P	P	P	F	P	P	P	P	P	F	F	F	F	F	F	F	F							
R.D. No. 307, Lisbon	6.7	P	P	P	P	P	P	P	P	P	P	P	F	P	F	F	P	P	P	P	P	P							
R.D. No. 317, Lower Andrus	2.0	P	P	P	P	G	G	G	G	P	P	P	P	P	F	F	F	F	F	F	F	P							
R.D. No. 341, Sherman	9.7	P	P	P	P	P	P	P	P	P	P	P	P	P	G	G	G	G	F	F	G	F							
R.D. No. 349, Sutter	12.6	P	P	F	P	P	P	P	P	P	P	P	P	P	F	F	P	P	F	P	F	P							
R.D. No. 369, Libbey-McNeil	0.8	P	P	F	P	P	P	P	P	P	P	P	P	P	P	P	P	F	P	P	P	P							
R.D. No. 407, Mid Andrus	7.4	P	P	P	P	P	P	P	F	P	P	P	P	P	F	G	G	G	G	G	G	G							
R.D. No. 501, Eyer Island	20.5	F	F	F	F	F	F	F	F	G	G	G	F	G	G	G	G	G	G	G	G	G							

O-Outstanding G-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																										
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 536, Egbert	10.7	P	P	F	F	P	P	P	P	P	G	G	G	F	G	G	G	F	F	F	G	G							
R.D. No. 537, Lovdal	6.1	P	P	F	F	F	F	F	G	F	G	G	G	G	F	G	G	G	F	1/	G	G							
R.D. No. 551, Pearson	6.8	P	P	F	F	F	P	P	P	P	P	F	P	P	F	F	F	P	F	F	F	G							
R.D. No. 554, Walnut Grove	1.2	P	P	P	P	P	P	P	P	P	P	G	F	G	F	P	P	P	P	P	P	P							
R.D. No. 556, Upper Andrus	11.2	P	P	P	G	F	P	P	F	P	F	P	P	P	F	F	F	F	F	F	F	F							
R.D. No. 563, Tyler Island	12.4	P	P	P	G	G	P	P	F	P	G	F	F	F	F	F	F	G	F	F	F	F							
R.D. No. 755, Randall	1.9	P	F	F	P	P	P	P	P	P	P	P	P	F	F	P	P	P	F	F	F	F							
R.D. No. 765, Glide	1.7	P	P	P	P	P	P	P	P	P	P	F	P	P	F	F	P	P	G	G	F	F							
R.D. No. 777, Live Oak	4.1	F	F	F	F	P	F	F	P	P	G	G	F	G	G	G	G	G	G	G	G	G							
R.D. No. 784, Plumas Lake	32.4	F	F	G	G	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 785, Driver	5.7	P	P	F	F	P	P	F	F	F	F	G	F	F	F	F	F	G	F	F	F	F							
R.D. No. 787, Fair	4.4						G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 817, Carlin	7.7	P	P	P	P	P	P	P	F	F	P	P	G	F	F	G	G	G	G	G	F	F							
R.D. No. 827, Elkhorn	4.2	P	P	F	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	P	P	P							
R.D. No. 900, West Sacramento	13.7	F	P	P	P	P	P	F	P	P	P	G	F	F	F	F	F	F	G	G	G	G							
R.D. No. 999, Netherlands	32.3	F	F	F	F	P	P	F	F	F	F	G	F	F	F	F	F	G	F	F	F	F							

O-Outstanding G-Good F-Fair P-Poor 1/ Not Inspected Reconstruction

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																									
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 1000, Natomas	42.6	F	P	P	F	P	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 1001, Nicolaus	44.1	P	F	F	F	F	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 1500, Sutter Basin	54.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	0	0	0	0	0							
R.D. No. 1600, Mull	14.8	P	F	F	F	F	F	F	G	G	G	G	F	F	F	F	F	F	F	F	F	G							
R.D. No. 1601, Twitchell	2.5	P	P	P	P	F	P	P	G	G	G	G	G	G	F	G	G	G	F	F	F	F							
R.D. No. 1660, Tisdale	12.2	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 2035, Conaway	12.1	P	P	F	P	P	F	F	F	G	G	G	G	G	G	G	G	0	0	0	0	0							
R.D. No. 2060, Hastings	16.2	F	F	F	F	F	F	F	F	F	G	G	G	G	G	G	G	F	G	G	G	F							
R.D. No. 2067, Brannan	10.2	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	P	P	P	F	F	F							
R.D. No. 2068, Yolano	8.7	P	P	F	F	P	P	P	P	P	F	G	G	G	G	G	G	G	G	G	G	G							
R.D. No. 2098, Cache-Haas Area	12.2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	G	G	G	G							
R.D. No. 2103, Wheatland	9.7	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	1/	P	P							
R.D. No. 2104, Peters Pocket	7.4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	F	F	1/	P	F	F	G							
American River Flood Control District	24.1	F	F	F	F	F	G	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G							
Sacramento R. W. S. Levee District	50.2	P	F	F	G	F	F	F	F	F	F	G	G	G	F	F	F	F	F	G	F	G							
City of Marysville	11.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	O	O	O	O	O							

1/ Reconstruction - Not Inspected O-Outstanding G-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																								
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
City of Sacramento	3.6	P	P	P	P	P	P	P	F	G	G	G	G	G	G	G	F	G	G	G	G	G							
Knights Landing Ridge D. D.	12.5	P	P	P	P	F	G	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Eastern Honcut Creek Area	1.5							P	F	F	F	F	P	P	P	P	P	P	P	P	P	P							
Deer Creek, Tehama County	6.9						P	P	F	F	F	F	P	P	P	F	G	F	F	F	F	G							
Elder Creek, Tehama County	8.1															G	G	G	F	G	F	G							
Sacramento River, Tehama County	3.9																		F	G	G	G							
Cache Creek, Yolo County	0.2															G	G	P	F	G	G	G							
Chico, Mud & Sandy Creeks (Butte County)	24.4																			G	G	G							
STATE OF CALIFORNIA																													
Sacto. R. E. Levee Colusa Co.	24.7	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
E & W Levee Wadsworth Canal	9.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
E. Levee Sutter Bypass	22.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
W. Levee Feather Riv. Hamilton	3.4	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Cache Creek & Settling Basin	23.1	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
N & S Levee Sacramento Bypass	3.6	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
W. Levee Yolo Bypass	9.3	F	F	F	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							

O-Outstanding G-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summery maintenance record by years																										
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
E. Levee Yolo Bypass	2.0	F	F	F	F	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
N & S Levee Willow Sl. Bypass	12.5			P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
N & S Levee Putah	16.3				P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
N & S Levee Tisdale Bypass	9.0	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
MAINTENANCE AREAS																												
No. 1 (R.D. 2047)	17.1	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 2 (L.D. No. 1, Glenn Co.)	12.4	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 3 (R.D. 803 and 823)	5.2	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 4 (R.D. 811 & Wash. L.D.)	3.4	P	P	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 5 (Butte Creek)	31.9						P	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 6 (R.D. 730 & K.L. Area)	6.0	P	P	P	F	F	F	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
No. 7 (D.D. No. 1 & Unorg.)	12.1										G	G	G	G	G	G	G	G	G	G	G	G							
No. 8 (S.Levee Yuba River)	3.8										F	G	G	G	G	G	G	G	G	G	G	G							
No. 9 (E. Levee Sacramento) (River South of Sacramento)	19.6										F	G	G	F	G	F	F	F	F	F	G	G							
No. 10 (N. Levee American River)	4.3												G	G	G	G	G	G	G	G	G	G							
No. 11 (R.D. 2077 & Unorg.)	4.0												G	G	G	G	G	G	G	G	G	G							

O-Outstanding G-Good F-Fair P-Poor

TABLE 4

SUMMARY OF MAINTENANCE BY YEARS

SACRAMENTO AND AMERICAN RIVER FLOOD CONTROL PROJECTS

District or Area	Total miles	Summary maintenance record by years																										
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	68	67	68	69	70	71	72	73	74
MAINTENANCE AREAS (cont.)																													
No. 12 (Colusa Basin Drain)	11.3												G	G	G	G	G	G	G	G	G	G							
(Cherokee Canal) No. 13 Butte County	42.0															G	G	G	G	G	G	G							

O-Outstanding G-Good F-Fair P-Poor

TABLE 5

SUMMARY OF MAINTENANCE BY YEARS

SAN JOAQUIN AND TRIBUTARIES AND MISCELLANEOUS PROJECTS

District or Area	Total miles	Summary maintenance record by years																									
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 1, Union Island	1.2												P	G	G	G	G	G	G	G	G	G							
R.D. No. 17, Mossdale	16.2												F	F	G	G	1/	G	G	G	G	G							
R.D. No. 404, Boggs	4.1												P	F	P	F	G	G	F	F	F	F							
R.D. No. 524, Mid Roberts Isl.	6.3												P	P	F	F	1/	G	F	F	F	F							
R.D. No. 544, Upper Roberts Isl.	10.3												P	P	P	P	1/	F	F	F	F	F							
R.D. No. 2031, Elliott	13.2																				1/	G							
R.D. No. 2058, Pescadero	6.7												P	P	G	G	G	G	G	G	G	G							
R.D. No. 2062, Island	12.2												P	F	G	G	G	G	G	G	G	G							
R.D. No. 2063, Crows Landing	10.6															G	F	G	G	G	G	G							
R.D. No. 2064, River Junction	9.7												F	G	G	G	F	F	G	G	1/	1/							
R.D. No. 2075, McMullin	7.6												P	P	G	G	G	G	G	G	1/	1/							
R.D. No. 2085, Kasson	5.4																					1/							
R.D. No. 2089, Stark	2.9													P	P	F	1/	F	P	F	F	F							
R.D. No. 2091, Chase	7.6															G	P	P	F	F	F	P							
R.D. No. 2092, Dos Rios	3.8															G	F	F	F	F	F	F							
R.D. No. 2094, Walthall	3.3																	F	G	G	G	G							

1/ Reconstruction - Not Inspected O-Outstanding G-Good F-Fair P-Poor

TABLE 5

SUMMARY OF MAINTENANCE BY YEARS

SAN JOAQUIN AND TRIBUTARIES AND MISCELLANEOUS PROJECTS

District or Area	Total miles	Summary maintenance record by years																								
		47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
R.D. No. 2095, Paradise Junction	4.4												P	P	P	P	P	P	P	P	P	P							
R.D. No. 2096, Weatherbee Lake	0.2																		G	G	G	G							
R.D. No. 2099, El Soya Ranch	2.4																				1/	F							
R.D. No. 2100, White Lake Ranch	2.7																				1/	G							
R.D. No. 2101, Blewett	3.5																				1/	G							
R.D. No. 2102, Lara Ranch	1.8																				1/	F							
Lower San Joaquin Levee Dist.	191.5															G	G	G	G	G	G	G							
San Joaquin County (unorganized)	4.2												P	P	P	P	P	P	P	P	P	P							
MISCELLANEOUS PROJECTS																													
Littlejohns & Duck Cr. Div. (San Joaquin Co. Fl. Cont. Dist.)	6.4				G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G							
Bear Creek San Joaquin County Flood Control District	46.5																		1/	G	G	G							
Merced County Stream Group (Merced Irrigation District)	6.4												P	F	G	G	G	F	F	G	G	G							
Fresno County Stream Group (Fresno Irrigation District)	9.3				G	G	G	G	G	G	G	G	F	G	G	G	G	F	F	F	G	G							
Middle Creek (Lake County Fl.Con.Dist.)	14.3														G	G	G	G	F	G	G	G							
Truckee River Channel (Placer Co. Dept. of Public Works)	0.6														G	G	G	G	G	G	G	G							

O-Outstanding G-Good F-Fair P-Poor [illegible] Reconstruction - Not Inspected

TABLE 6

1967 SUMMARY
OF
MAINTENANCE PERFORMANCE ON SACRAMENTO RIVER AND TRIBUTARIES
AND AMERICAN RIVER FLOOD CONTROL PROJECT

GOOD	FAIR	POOR
L.D. No. 1	R.D. No. 3	R.D. No. 307
L.D. No. 2	R.D. No. 150	R.D. No. 317
L.D. No. 3	R.D. No. 341	R.D. No. 349
L.D. No. 9	R.D. No .556	R.D. No. 369
R.D. No. 10	R.D. No. 563	R.D. No. 554
R.D. No. 70	R.D. No. 755	R.D. No. 827
R.D. No. 108	R.D. No. 765	R.D. No. 2103
R.D. No. 407	R.D. No. 785	Eastern Honcut Creek
R.D. No. 501	R.D. No. 817	
R.D. No. 536	R.D. No. 999	
R.D. No. 537	R.D. No. 1601	
R.D. No. 551	R.D. No. 2067	
R.D. No. 777		
R.D. No. 784		
R.D. No. 787		
R.D. No. 900		
R.D. No. 1000		
R.D. No. 1001		
R.D. No. 1500 1/		
R.D. No. 1600		
R.D. No. 1660		
R.D. No. 2035 1/		
R.D. No. 2060		
R.D. No. 2068		
R.D. No. 2098		
R.D. No. 2104		
Amer. Riv. Fl. Cont. Dist.		
City of Marysville 1/		
City of Sacramento		
Sacto. Riv. Westside Levee District		
Knights Landing Ridge D.D.		
Tehama Co. Fl. Cont. Dist.		
Cache Creek (Yolo County)		
Chico, Mud & Sandy Crks. (Butte Co.)		
STATE MAINTAINED AREAS Maintenance Areas No. 1,2,3,4,5,6,7,8,9, 10, 11, 12 & 13		

1/ Outstanding

TABLE 7

1967 SUMMARY
OF
MAINTENANCE PERFORMANCE ON SAN JOAQUIN RIVER AND TRIBUTARIES
AND MISCELLANEOUS PROJECTS

GOOD	FAIR	POOR
R.D. No. 1	R.D. No. 404	R.D. No. 2091
R.D. No. 17	R.D. No. 524	R.D. No. 2095
R.D. No. 2031	R.D. No. 544	San Joaquin Co. (Unorganized)
R.D. No. 2058	R.D. No. 2089	
R.D. No. 2062	R.D. No. 2092	
R.D. No. 2063	R.D. No. 2099	
R.D. No. 2094	R.D. No. 2102	
R.D. No. 2096		
R.D. No. 2100		
R.D. No. 2101		
San Joaquin County Flood Cont. Dist.		
Fresno County Stream Group		
Merced County Stream Group		
Lower San Joaquin Levee District		
Lake County Flood Control District		
Truckee River (Channel)		

APPENDIX A

STANDARD MAINTENANCE PROCEDURES

STANDARD MAINTENANCE PROCEDURES

Levee maintenance is a continuing task which must be carried on each year without interruption. Each year steps must be taken to exterminate burrowing animals and to provide for routine mowing and burning of grass and weeds, removal of wild growth and repair of damage by erosion or other causes. The principal objectives of annual maintenance are to produce a stable levee at the start of the high water season and to have the slopes clear for effective inspection and, if necessary, patrolling and flood fighting activities.

In order to secure a uniform degree of operation and maintenance on federal flood control projects throughout the nation, the U. S. Corps of Engineers has issued regulations governing the maintenance and operation of flood control works. These regulations established a high standard of maintenance.

"Recommendations for Levee Maintenance", listed hereafter with comments, were adapted from U. S. Corps of Engineers regulations by the Department of Water Resources:

> "1. Clear brush, trees and wild growth, other than sod from the levee crown and slopes. Herbicides applied with suitable equipment, under proper control and conditions, have been successfully employed in eradicating pernicious growths of vegetation."

Contrary to the often expressed belief that growth of trees and brush is beneficial for protection of the levee slopes, long experience has demonstrated that this is in error for the following reasons:

Under wind and wave action the larger growths tend to pull at their root systems, causing them to uproot themselves, disturb the soil or rock revetment and permit accelerated erosion to take place. Fallen trees may also cause harmful current deflection and accumulate drift, which can compound the erosive action. The roots of large trees also attract burrowing animals to the protective shelter afforded.

Removal of such growth promotes a growth of sod or grass, the pliable roots of which tend to provide a soil binding net.

The application of herbicides, applied under permit obtained from the county agricultural commissioner, should be performed annually to eradicate noxious weeds and to prevent regrowth of larger plants.

> "2. Burn weeds, grass and debris on the levee during the appropriate season, where not dangerous or impracticable, in order to permit the detection of cracks, holes, burrows, slips and other damage and to permit the detection and extermination of burrowing animals. Restrictions in the area in connection with air pollution control should be checked before undertaking any burning operation."

This task should be performed annually during the late summer months after adjacent high inflammable crops have been removed. Fireguards should be established around improvements and burning should be performed in such a manner as to take advantage of prevailing winds.

Burning before July destroys wildlife habitats and delaying the task until after the first rains has been unsuccessful in nearly all instances due to the high absorption rate of dry material, particularly the woody stemmed weeds.

"3. Mow grass and weeds on the levee where removal by burning is dangerous or impracticable, such as on peat levees or where burning would constitute a hazard to improvements, or where burning is restricted for any purpose."

This item is in lieu of burning as provided for in the preceding item. It is for the most part, intended to apply only to peat levees which comprise only a few miles.

Protection for improvements may be accomplished by mowing, fireguarding, or the use of soil sterilants.

"4. Exterminate burrowing animals with the use of poison, gas, or traps. This task requires frequent patrols in order to assure successful results."

The control and extermination of burrowing animals must be pursued frequently and persistently in order to assure the safety of the levee during flood periods.

The eradication of these animals is a necessity and their elimination from an infested levee is extremely difficult. It can only be effectively accomplished on a cleared levee through constant effort. Care should be exercised not to poison birds and other desirable wildlife.

Observation indicates that, contrary to general belief, burrowing rodents can and do infest sand levees as well as those composed of heavier or more cohesive soils. A possible explanation for this condition is the fact that many of the sand levees are in reality a sand cover placed over an older soil levee. It is also a fact that some of the older pipe structures, those without cutoff walls, provide a means whereby burrowing rodents

can and do excavate burrows immediately under the pipe and thus provide a non-caving burrow.

> "5. Repair caves, sloughs, burrows, holes, slips or other damaged portions of the levee with suitable material properly bonded and compacted in place."

This item of the recommendations clearly defines the procedure required. However, particular attention should be directed to the complete filling and compacting of rodent burrows.

It has often been observed that maintenance personnel have effectively exterminated the burrowing animals but have failed to backfill the burrows, the most essential part of the task. If the burrows are filled, the detection of fresh diggings will show that the rodents were not exterminated and repeated poisoning or gassing is required.

> "6. Examine and repair, as required, drains and appurtenant control works and other structures through the levee."

A thorough examination of each and every structure situated in, on, or through the levee, should be made at least once yearly to determine its stability. All component parts should also be examined for effectiveness of operation and reliability. The installation of new, or repairs to older structures, should be made only in accordance with adopted standards and under the supervision of qualified personnel.

Defective structures should be immediately repaired or replaced. Abandoned structures should be removed from the levee or otherwise treated so as not to become hazards.

"7. Replace or repair displaced or damaged revetment work or riprap."

The very fact that revetment works have been installed at a location is indicative of the need for extra protection and such works should never be permitted to deteriorate.

Damages to existing revetment works are for the most part, few in number. However, those which have occurred are largely caused by nonmaintenance. Growth of trees and brush should be controlled in order to prevent damage or displacement of revetment.

The early detection of damage and prompt repair will, in most instances, result in a minimum of effort and expense to restore the revetment. Many times a simple rearrangement of the stones or cobble will produce the desired result. Occasionally it may be necessary to place additional rock at damaged locations in the existing work.

"8. Maintain the road on the levee and shape the crown so as to provide uniform drainage. Restrict unauthorized vehicular travel."

Surfaced crown patrol roadways have been established on nearly all project levees exclusively for the convenience of maintenance patrols and flood fighting personnel. It is essential that the roads be maintained in good condition for these purposes. The roadway should be bladed and maintained to provide a smooth surface, without ruts or potholes. The levee shoulder should be sloped so as to immediately drain rainfall away from the crown. In general, the entire crown should be rounded with the center higher than the shoulders. A flat, level section across the crown is considered poor practice.

Except for those levees upon which a public road has been established, vehicular traffic should be restricted to maintenance personnel only. Proper maintenance includes the placing of additional surfacing when and as required, to provide a stable, reliable roadway for maintenance, patrols, and flood fighting.

"9. Restrict stock grazing on the levee to conditions and seasons when the levee would not be seriously scarred or otherwise damaged thereby."

This item is probably the most controversial requirement in the recommendations. Although considered a proprietary right by many landowners and operators adjacent to the levee, this practice is a privilege only, and if allowed, should be carried on only under strict surveillance. Several legal decisions have been rendered in support of this recommendation.

Grazing on the levees should be tolerated only under the control of and by permit from the responsible district authority. Under this plan, those who abuse the privilege may be restricted and prevented from causing damage, the repair of which becomes a local district obligation.

"10. Remove or rectify obstacles to travel by authorized patrol vehicles."

This recommendation is self-explanatory and fully justified, however, some further explanation is presented.

The desirability of preserving property lines may be justified; however, some of the existing levee gates erected for this purpose appear to have been installed to impede traffic

and the numerous intervening structures of a like nature are unnecessary for any purpose other than an obstruction, or for the undesirable practice of confining livestock on the levee. If cross fences and gates are necessary, they should be so constructed that they may be quickly and easily operated.

All other obstructions or encroachments on the levee should be removed unless specifically authorized by permit from The Reclamation Board.

> "11. Prevent the erection of structures on, additions to, or alterations of the levee unless authorized by permit from The Reclamation Board."

This recommendation is not only a part of the federal regulations, but is specifically covered by state legislation which is all inclusive of any encroachment on the levees and other flood control works.

It is the responsibility of all districts or agencies to insure that before any work is started on any structure, building, pipeline, poleline, or construction of any kind, whether it is in, on, along or under any levee, or fill on or next to the levee, or on the berm, or on the landside near the levee or in the overflow or flooded area, that an application, complete with plans, be filed in triplicate with The Reclamation Board. Approved applications are covered by a permit which designates the conditions under which the proposed work may be accomplished. One of the conditions of the permit is that three-day notice prior to the start of construction must be given to the Department of Water Resources.

The Department inspects and supervises the installation of these encroachments to insure that the work conforms to the plans and conditions as approved by The Reclamation Board.

> "12. Organize forces, stock materials, and procure equipment for general maintenance and for patrols and repairs during emergencies."

In order to meet thse requirements, a permanent operating organization, properly equipped, is necessary to perform ordinary maintenance, make repairs and direct supplementary forces during emergencies.

It is therefore suggested that the district, or other agency responsible for performing the work, provide the following:

(a) A superintendent to organize forces and direct operations.

(b) Stocks of standard flood fighting materials and supplies, such as sacks, burlap, canvas, lumber and etc. These stocks should be seriously considered, particularly in localities which might become isolated from sources of supply during emergencies.

(c) Suitable equipment for the performance of maintenance, secured either through purchase or rental. A list of available equipment should be made prior to the flood season for possible use during emergencies.

(d) Frequent patrols and inspections of the levees. During flood periods constant patrols should be inaugurated and continued for the duration of the emergency. Such patrols should be equipped with supplies, materials and tools.

Prior to flood season, arrangements should be made for the ready procurement of flood fighting labor forces and supervisory personnel.

A P P E N D I X B

LEVEE CONSTRUCTION DURING 1967

MAJOR LEVEE RECONSTRUCTION
DURING 1967

During 1967, the U. S. Corps of Engineers completed levee construction, reconstruction, patrol roads, turnouts, bank protection and channel improvement work on the following projects:

SACRAMENTO RIVER FLOOD CONTROL PROJECT

Specification No.	Site Mile or Unit No.	Location	Maintaining Agency	Levee Mile	Description of Work Completed
3154	80.7 R	Right Bank Sacto. River	R.D.No. 1600	9.44 to 9.60	Levee Reconstruction Rock Revetment & Gravel Crown Roadway
3156	16.7	Left Bank Steamboat Slu.	R.D. No. 3	9.46 to 9.09	Levee Reconstruction Rock Revetment & Paved Crown Roadway
3156	17.3	do	R.D. No. 3	8.83 to 8.87	do
3156	17.4	do	R.D. No. 3	8.72 to 8.75	do
3156	17.6	do	R.D. No. 3	8.54 to 8.56	do
3156	18.0	do	R.D. No. 3	7.95 to 8.35	do
3156	19.3	do	R.D. No. 3	6.64 to 7.26	do
3156	20.0	do	R.D. No. 3	5.92 to 6.19	do

Specification No.	Site Mile or Unit No.	Location	Maintaining Agency	Levee Mile	Description of Work Completed
3156	20.7	do	R.D. No. 3	5.42 to 5.47	do
3156	20.9	do	R.D. No. 3	5.11 to 5.35	do
3156	21.3	Left Bank Steamboat Sl.	R.D. No. 3	4.75 to 4.92	do
3156	21.8	do	R.D. No. 3	4.29 to 4.41	do
3156	22.2	do	R.D. No. 3	3.83 to 3.90	do
3156	22.8	do	R.D. No. 3	3.22 to 3.26	do
3156	23.4	do	R.D. No. 3	2.68 to 2.74	do
3156	23.7	do	R.D. No. 3	2.33 to 2.35	do
3156	24.0	do	R.D. No. 3	1.97 to 2.10	do
3156	24.2	do	R.D. No. 3	1.81 to 1.87	do
3156	24.4	do	R.D. No. 3	1.59 to 1.76	do
3157	1.3	Left Bank Threemile Sl.	R.D. No.1601	0.32 to 0.39	Levee Reconstruction Rock Revetment & Gravel Crown Roadway

Specification No.	Site Mile or Unit No.	Location	Maintaining Agency	Levee Mile	Description of Work Completed
3157	1.7	do	R.D. No. 1601	1.01 to 1.11	do
3157	16.6	Left Bank Sacto. River	R.D. No. 2067	0.76 to 0.86	Levee Reconstruction Rock Revetment & Paved Crown Roadway
3157	18.5	Right Bank Sacto. River	R.D. No. 3	3.56 to 3.67	do
3157	18.8	do	R.D. No. 3	3.85 to 3.93	do
3157	23.7	do	R.D. No. 3	8.82 to 9.00	do
3157	24.1	do	R.D. No. 3	9.10 to 9.40	do
3157	29.4	Left Bank Sacto. River	R.D. No. 551	5.25 to 5.69	Levee Reconstruction Rock Revetment & Paved Crown Roadway
3157	29.9	do	R.D. No. 551	4.83 to 4.93	do
3157	31.0	do	R.D. No. 551	3.69 to 4.07	do
3157	31.3	do	R.D. No. 551	3.28 to 3.69	do

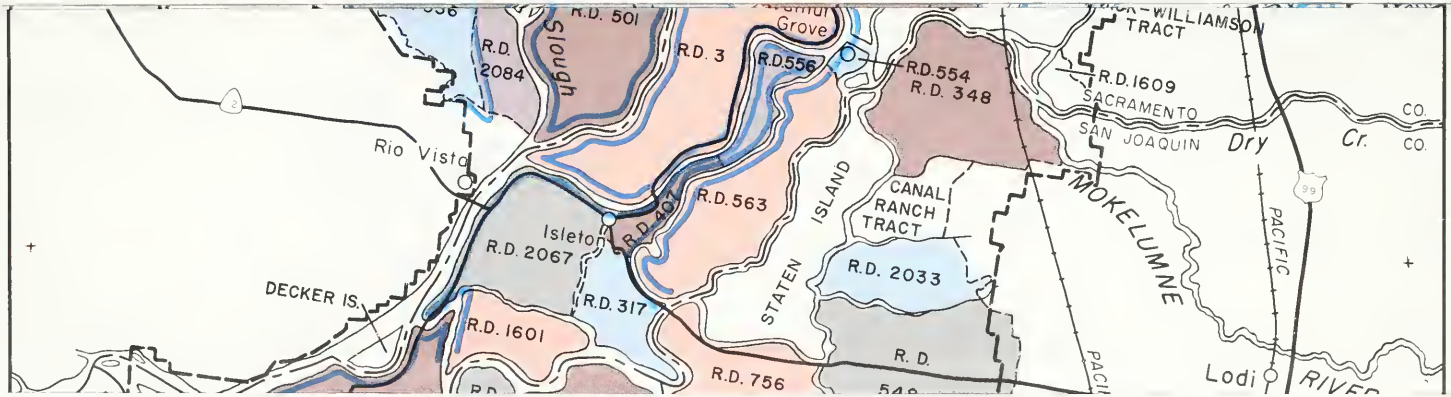
Specification No.	Site Mile or Unit No.	Location	Maintaining Agency	Levee Mile	Description of Work Completed
3157	31.9	do	R.D. No. 551	2.79 to 2.96	do
3157	36.5	do	R.D. No. 755	0.16 to 0.23	do
3157	35.0	Right Bank Sacto. River	R.D. No. 150	1.00 to 1.18	do
3157	37.5	do	R.D. No. 150	3.57 to 3.64	do
3157	38.0	do	R.D. No. 150	3.95 to 4.13	do
3157	52.9	do	R.D. No. 900	5.97 to 6.50	do
3288	79.5	do	R.D. No. 1600	8.50 to 9.10	Levee Reconstruction Rock Revetment & Gravel Crown Roadway
3288	147.5	Left Bank Sacto. River	State of California	8.30 to 8.82	do
3418	1	Left Bank Yolo Bypass	R.D. No. 827	1.29 to 2.75	Levee Reconstruction & Rock Revetment
3418	2	do	R.D. No. 900	0.50 to 0.98	do

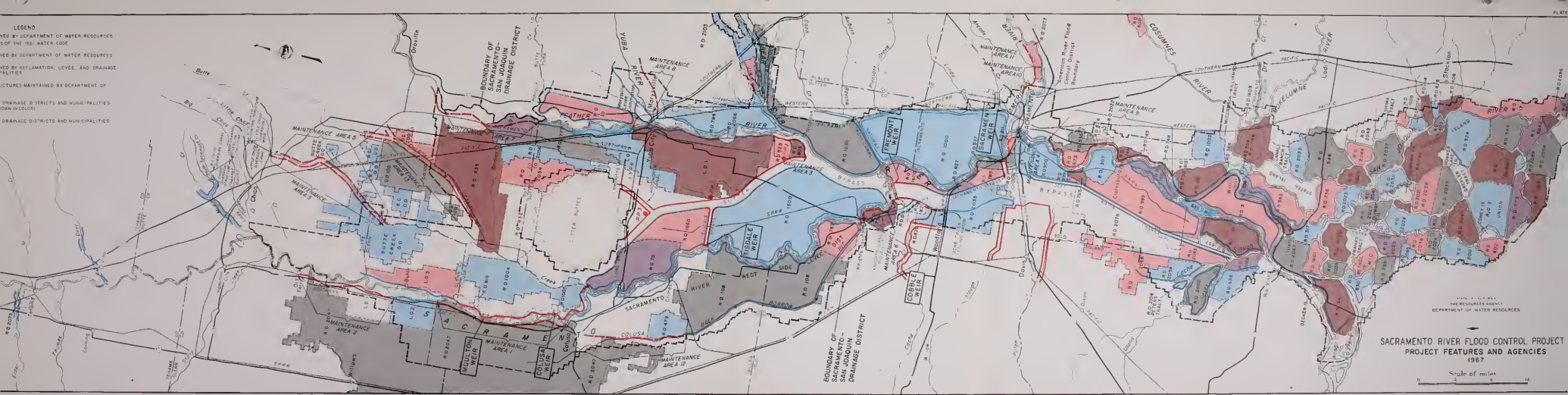
Specification No.	Site Mile or Unit No.	Location	Maintaining Agency	Levee Mile	Description of Work Completed
3418	3	Right Bank Yolo Bypass	R.D. No. 2098	0.03 to 0.60	do
3418	3	do	R.D. No. 2098	1.00 to 1.62	do
		SAN JOAQUIN RIVER FLOOD CONTROL PROJECT			
3042		Left Bank San Joaquin Riv.	R.D. No. 2085	0.00 to 5.40	Levee Construction Rock Revetment Gravel Crown Roadway

Total new construction during 1967 by U. S. Corps of Engineers

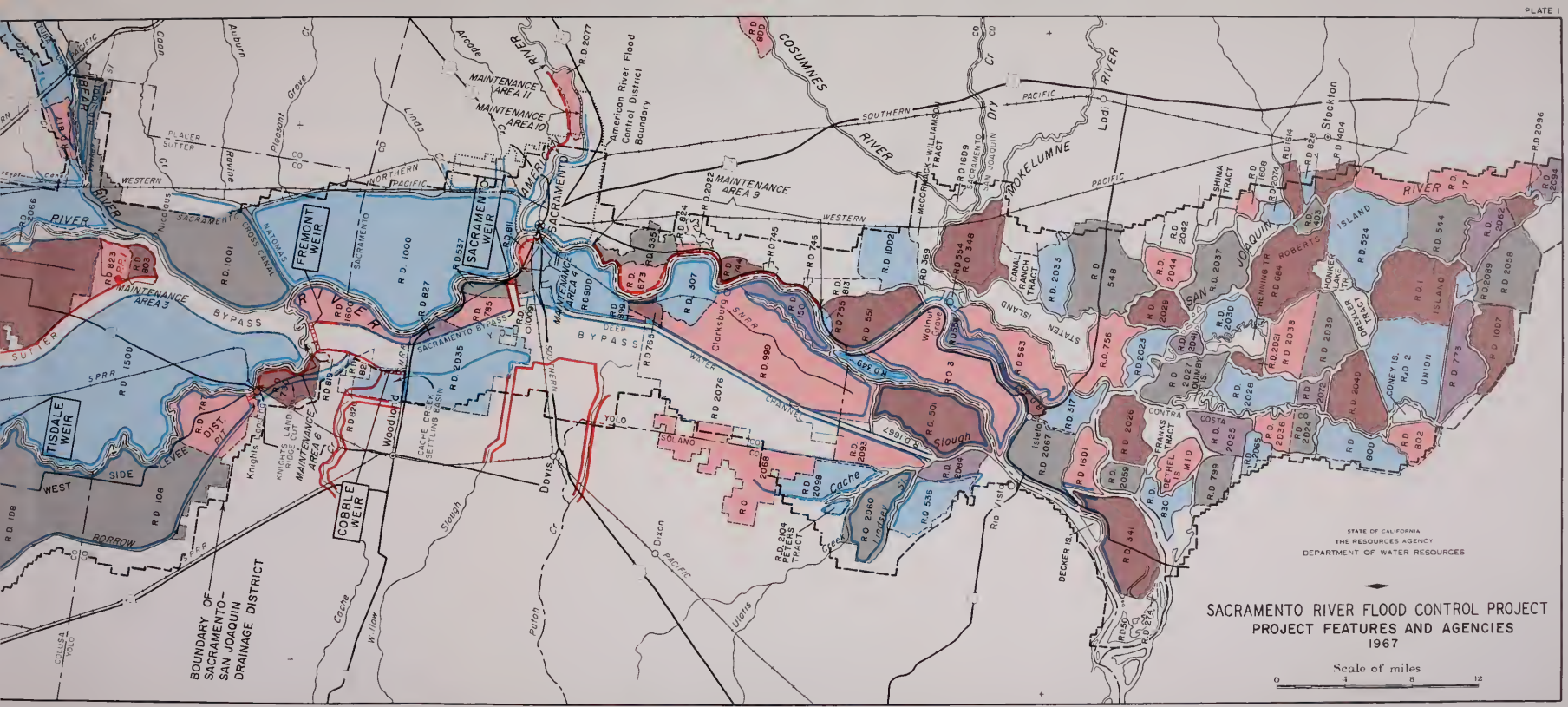
Miles of construction or reconstruction.... 15.8

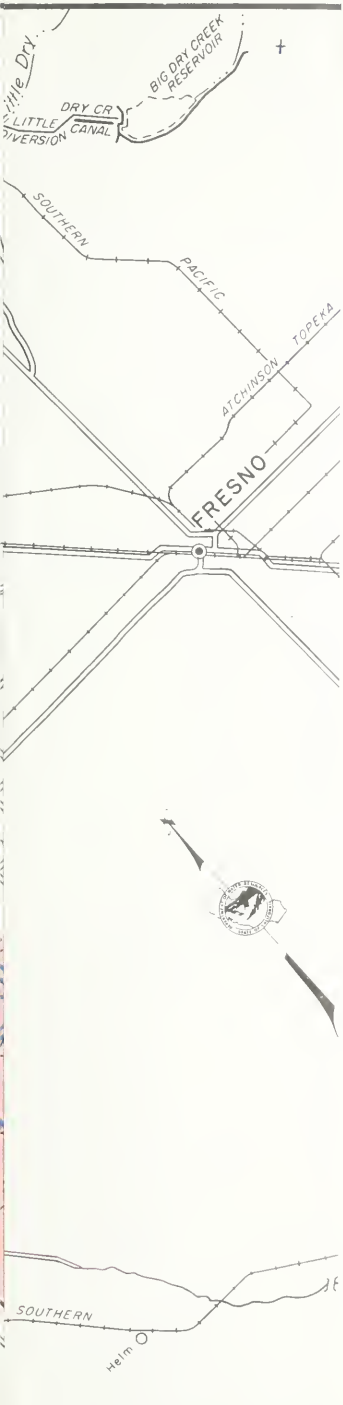
Miles of rock revetment..... 11.8

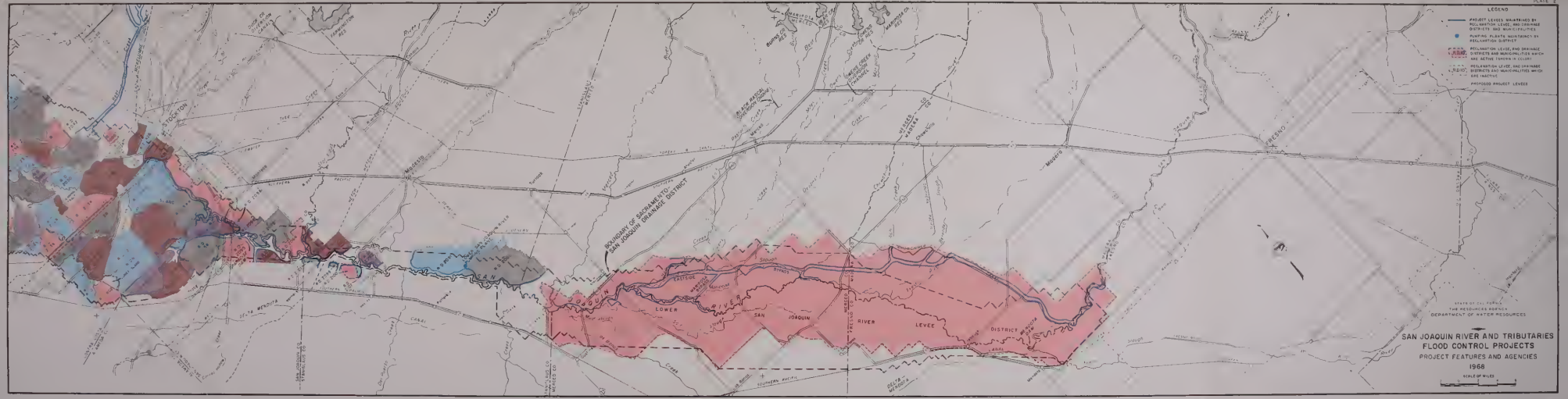

R.D. 501
Slough
R.D. 2084
R.D. 3
Walnut Grove
R.D.556
R.D.554
R.D. 348
WILLIAMSON TRACT
R.D.1609
SACRAMENTO
SAN JOAQUIN
Dry
Cr.
CO.
CO.
Rio Vista
R.D. 563
R.D. 501
Isleton
R.D. 2067
CANAL RANCH I TRACT
STATEN ISLAND
MOKELUMNE
PACIFIC
99
DECKER IS.
R.D. 317
R.D. 2033
R.D. 1601
R. D.
R.D. 756
Lodi
RIVER


LEGEND
NED BY DEPARTMENT OF WATER RESOURCES
S OF THE 1961 WATER CODE
NED BY DEPARTMENT OF WATER RESOURCES
NED BY RECLAMATION, LEVEE, AND DRAINAGE
ALITIES
CTURES MAINTAINED BY DEPARTMENT OF
DRAINAGE D STRICTS AND MUNICIPALITIES
OWN IN COLOR)
DRAINAGE DISTRICTS AND MUNICIPALITIES
BOUNDARY OF SACRAMENTO-SAN JOAQUIN DRAINAGE DISTRICT
MAINTENANCE AREA 1
MAINTENANCE AREA 2
MAINTENANCE AREA 3
MAINTENANCE AREA 4
MAINTENANCE AREA 5
MAINTENANCE AREA 6
MAINTENANCE AREA 7
MAINTENANCE AREA 8
MAINTENANCE AREA 9
MAINTENANCE AREA 10
MAINTENANCE AREA 11
MAINTENANCE AREA 12
SACRAMENTO
FEATHER RIVER
BUTTE BASIN
BYPASS
FREMONT WEIR
SACRAMENTO WEIR
FIGNOLE WEIR
MOULTON WEIR
COLUSA WEIR
COBBLE WEIR
SACRAMENTO RIVER
WEST SIDE
COLUSA
BOUNDARY OF SACRAMENTO-SAN JOAQUIN DRAINAGE DISTRICT
COSUMNES RIVER
MOKELUMNE RIVER
Sacramento River Flood Control District Boundary
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SACRAMENTO RIVER FLOOD CONTROL PROJECT
PROJECT FEATURES AND AGENCIES
1967
Scale of miles


LEGEND
PROJECT LEVEES MAINTAINED BY DEPARTMENT OF WATER RESOURCES: SEC. 12878 TO SEC 12878.45 OF THE 1961 WATER CODE
PROJECT LEVEES MAINTAINED BY DEPARTMENT OF WATER RESOURCES
PROJECT LEVEES MAINTAINED BY RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES.
P.P.1 PUMPING PLANTS AND STRUCTURES MAINTAINED BY DEPARTMENT OF WATER RESOURCES
R.D.13 RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE ACTIVE (SHOWN IN COLOR)
R.D.13 RECLAMATION, LEVEE, AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE INACTIVE.
Oroville
BOUNDARY OF SACRAMENTO-SAN JOAQUIN DRAINAGE DISTRICT
YUBA RIVER
FEATHER RIVER
Marysville
Yuba City
MAINTENANCE AREA 8
MAINTENANCE AREA 7
MAINTENANCE AREA 5
MAINTENANCE AREA 13
MAINTENANCE AREA 2
MAINTENANCE AREA 1
MAINTENANCE AREA 12
SACRAMENTO RIVER
SACRAMENTO
COLUSA
Colusa
Williams
Willows
Orland
Hamilton City
Chico
Oroville
Gridley
Butte City
Grimes
Princeton
Meridian
Maxwell
Arbuckle
Woodland
Davis
Dunnigan
Winters
Vacaville
Dixon
Vina
Tehama
Corning
Red Bluff
Paynes
Antelope
Mill
Deer
Thomes
Elder
Red Bank
Stony
Big Chico Creek
Little Chico Creek
Butte Creek
Sycamore Cr
Mud Slough
Big Chico Diversion Canal
Big Chico Diversion Structure
Lindo Channel Diversion Structure
Channel (Lindo Gulch)
Little Chico Control Structure
Little Chico Diversion Canal
Little Chico Diversion Weir
Cherokee Canal
Sutter Buttes
Tisdale Weir
Tisdale Bypass
Long Bridge
Wadsworth Canal
Intercepting Ditch
Moulton Weir
Colusa Weir
Honcut
Southern Pacific
Northern
S.P.R.R.
Intercept Canal
Butte Co
Yuba Co
Sutter Co
Glenn Co
Colusa Co
Tehama Co
R.D. 2103
R.D. 784
R.D. 2066
R.D. 777
R.D. 2054
R.D. 1660
R.D. 70
R.D. 108
R.D. 479
R.D. 1004
R.D. 1005
R.D. 2047
R.D. 2073
R.D. 833
R.D. 832
R.D. 816
L.D. 1
L.D. 2
L.D. 3
B.C.D.D.
D.D. 100
D.D. 200
P.P. 3


SACRAMENTO RIVER FLOOD CONTROL PROJECT
PROJECT FEATURES AND AGENCIES
1967
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
Scale of miles
0 4 8 12
BOUNDARY OF SACRAMENTO-SAN JOAQUIN DRAINAGE DISTRICT
FREMONT WEIR
SACRAMENTO WEIR
COBBLE WEIR
TISDALE WEIR
MAINTENANCE AREA 1
MAINTENANCE AREA 2
MAINTENANCE AREA 3
MAINTENANCE AREA 4
MAINTENANCE AREA 9
MAINTENANCE AREA 10
MAINTENANCE AREA 11
SACRAMENTO RIVER
SACRAMENTO BYPASS
YOLO BYPASS
AMERICAN RIVER
COSUMNES RIVER
MOKELUMNE RIVER
SAN JOAQUIN RIVER
SOUTHERN PACIFIC
WESTERN PACIFIC
NORTHERN PACIFIC
SACRAMENTO NAVIGATION CANAL
AMERICAN RIVER FLOOD CONTROL DISTRICT BOUNDARY
Stockton
Woodland
Davis
Dixon
Cache Slough
Lindsey Slough
Ryer Island
Decker Is.
Grand Island
Union Island
Roberts Island
Staten Island
Canal Ranch Tract
McCormack-Williamson Tract
Shima Tract
Mossdale Tract
Henning Tract
Honker Cut
Knights Landing Ridge Cut
Cache Creek Settling Basin
Clarksburg Slough
Elkhorn Slough
Miner Slough
Steamboat Slough
Sutter Slough
Georgiana Slough
Delta Cross Channel
Walnut Grove
Isleton
Courtland
Franks Tract
Bethel Island
Coney Is.
Union
Costa
Contra Costa
Pacific
Lindsey
Putah
Willow
Cache
Lisbon
Colusa
Sutter
Yolo
Solano
San Joaquin
Placer
Sutter
Lake
Colusa
Glenn
Butte
Yuba
Sacramento
Nicolaus
Meridian
Arcade
Grove
Slough
Creek
Cr
Co
R.D. 1000
R.D. 1001
R.D. 827
R.D. 785
R.D. 1500
R.D. 108
R.D. 2035
R.D. 2076
R.D. 999
R.D. 307
R.D. 673
R.D. 535
R.D. 824
R.D. 745
R.D. 746
R.D. 1002
R.D. 369
R.D. 1609
R.D. 348
R.D. 554
R.D. 2033
R.D. 548
R.D. 2042
R.D. 2044
R.D. 2037
R.D. 2030
R.D. 2028
R.D. 2023
R.D. 2027 (Dumbarton Is.)
R.D. 2021
R.D. 2038
R.D. 2039
R.D. 2040
R.D. 2072
R.D. 2026
R.D. 2025
R.D. 2024
R.D. 2036
R.D. 2065
R.D. 2058
R.D. 1601
R.D. 317
R.D. 756
R.D. 583
R.D. 3
R.D. 501
R.D. 551
R.D. 755
R.D. 813
R.D. 2067
R.D. 2095
R.D. 2098
R.D. 2068
R.D. 2060
R.D. 536
R.D. 2104 PEREIRA TRACT
R.D. 341
R.D. 799
R.D. 830
R.D. 2058
R.D. 2066
R.D. 2067
R.D. 2096
R.D. 2094
R.D. 2089
R.D. 2062
R.D. 2058
R.D. 1007
R.D. 773
R.D. 544
R.D. 524
R.D. 17
R.D. 684
R.D. 2042
R.D. 2044
R.D. 2037
R.D. 2030
R.D. 2028
R.D. 2023
R.D. 2027
R.D. 2021
R.D. 2038
R.D. 2039
R.D. 2040
R.D. 2072
R.D. 2026
R.D. 2025
R.D. 2024
R.D. 2036
R.D. 2065
R.D. 2058
R.D. 1601
R.D. 317
R.D. 756
R.D. 583
R.D. 3
R.D. 501
R.D. 551
R.D. 755
R.D. 813
R.D. 2067
R.D. 2095
R.D. 2098
R.D. 2068
R.D. 2060
R.D. 536
R.D. 2104
R.D. 341
R.D. 799
R.D. 830
R.D. 2058
R.D. 2066
R.D. 2067
R.D. 2096
R.D. 2094
R.D. 2089
R.D. 2062
R.D. 2058
R.D. 1007
R.D. 773
R.D. 544
R.D. 524
R.D. 17
R.D. 684
R.D. 2042
R.D. 2044
R.D. 2037
R.D. 2030
R.D. 2028
R.D. 2023
R.D. 2027
R.D. 2021
R.D. 2038
R.D. 2039
R.D. 2040
R.D. 2072
R.D. 2026
R.D. 2025
R.D. 2024
R.D. 2036
R.D. 2065
R.D. 2058
R.D. 1601
R.D. 317
R.D. 756
R.D. 583
R.D. 3
R.D. 501
R.D. 551
R.D. 755
R.D. 813
R.D. 2067
R.D. 2095
R.D. 2098
R.D. 2068
R.D. 2060
R.D. 536
R.D. 2104
R.D. 341
R.D. 799
R.D. 830
R.D. 2058
R.D. 2066
R.D. 2067
R.D. 2096
R.D. 2094
R.D. 2089
R.D. 2062
R.D. 2058
R.D. 1007
R.D. 773
R.D. 544
R.D. 524
R.D. 17


Dry
BIG DRY CREEK RESERVOIR
DRY CR
LITTLE
CANAL
SOUTHERN
PACIFIC
TOPEKA
ATCHINSON
FRESNO
SOUTHERN
Helm


PLATE 2
LEGEND
PROJECT LEVEES MAINTAINED BY RECLAMATION LEVEE AND DRAINAGE DISTRICTS AND MUNICIPALITIES
PUMPING PLANTS MAINTAINED BY RECLAMATION DISTRICT
RECLAMATION LEVEE AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE ACTIVE (SHOWN IN COLOR)
RECLAMATION LEVEE AND DRAINAGE DISTRICTS AND MUNICIPALITIES WHICH ARE INACTIVE
PROPOSED PROJECT LEVEES
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SAN JOAQUIN RIVER AND TRIBUTARIES
FLOOD CONTROL PROJECTS
PROJECT FEATURES AND AGENCIES
1968
SCALE OF MILES
BOUNDARY OF SACRAMENTO-SAN JOAQUIN DRAINAGE DISTRICT
SAN JOAQUIN RIVER
LOWER SAN JOAQUIN RIVER LEVEE DISTRICT
STOCKTON
FRESNO
MERCED
MODESTO
TRACY
LATHROP
RIPON
MANTECA
LOS BANOS
DELTA MENDOTA CANAL
SAN LUIS CANAL
SOUTHERN PACIFIC
WESTERN PACIFIC
ATCHISON, TOPEKA & SANTA FE

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

RENEWED BOOKS ARE SUBJECT TO IMMEDIATE
RECALL

LIBRARY, UNIVERSITY OF CALIFORNIA, DAVIS

Book Slip–55m·10,'68(J404888)458—A-31, 5

UNIVERSITY OF CALIFORNIA DAVIS
3 1175 02468 6779

№ 601011

California. Department of Water Resources. Bulletin.
TC824
C2
A2
no.149:67
c.2

PHYSICAL SCIENCES LIBRARY

LIBRARY
UNIVERSITY OF CALIFORNIA
DAVIS

601011
California. Dept. of Water Resources. Bulletin.

Call Number:
TC824
C2
A2
no.149:67
c.2